CASE No. 15,339.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1893.

TERM No., 955.

THE SINGER MANUFACTURING COMPANY, PLAINTIFF IN ERROR,

vs.

A. BRILL.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE NINTH CIRCUIT.

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a In the Supreme Court of the United States, October Term, 1892.

Ex Parte SINGER MANUFACTURING COMPANY, Petitioner.

Petition for writ of certiorari requiring the circuit court of appeals for the ninth circuit to certify to the Supreme Court of the United States for its review and determination the case of The Singer Manufacturing Company, plaintiff in error, *vs.* Andrew Brill, defendant in error.

To the honorable the Supreme Court of the United States:

The petition of your petitioner, The Singer Manufacturing Company, respectfully shows to this honorable court as follows:

First. Your petitioner is a corporation duly organized under the laws of the State of New Jersey and having its principal place of business at the city of New York, county of New York, and State of New York, and that the defendant in error, Andrew Brill, is a citizen of the city and county of San Francisco and the State of California.

Second. That upon the fourteenth day of May, 1891, the *b* said Andrew Brill filed his complaint against your petitioner in the United States circuit court for the northern district of California, alleging infringement of certain letters patent of said Brill, dated July second, 1872, No. 128,460, for an alleged improvement in sewing-machine treadles; that upon the first day of July, 1891, your petitioner filed a plea of the general issue to said complaint and gave notice in writing of the defenses to be urged at the trial of the said cause in compliance with the statutes in such case made and provided.

Third. That said cause came on for trial on the twenty-first, twenty-second, twenty-third, twenty-seventh, twenty-eighth, twenty-ninth, thirtieth, and thirty-first days respectively of the month of October, 1891, and upon said thirty-first day of October, 1891, a verdict was rendered by the jury in said cause against your petitioner for the sum of ten thousand and eight dollars and thirty cents, and judgment was rendered upon said verdict for the said amount named therein in favor of the said plaintiff and against your petitioner.

Fourth. That a bill of exceptions was duly filed in said action and a writ of error was allowed. The said writ of error was regularly issued on the twenty-ninth day of March, 1892, was served upon the attorneys of the defendant in error on the thirtieth day of March, 1892, together with a citation citing and admonishing the defendant in error to appear in the said circuit court of ap- *c* peals and show cause why the said judgment should not be corrected. Under said writ of error the said judgment was properly brought before the said circuit court of appeals for review.

Fifth. That upon the twentieth day of April, 1892, a printed certified transcript of the record and all proceedings of the said circuit

court in the said case was filed in the said United States circuit court of appeals for the said ninth circuit, and the said case was entered and docketed in said circuit court of appeals and entitled "The Singer Manufacturing Company, plaintiff in error, *vs.* A. Brill, defendant in error."

A certified copy of the entire record in the case in the said circuit court of appeals is herewith furnished in conformity with rule 37 of this honorable court relative to cases from circuit court- of appeals, and the same is hereto attached and marked and identified herewith as "Exhibit A," and is made a part of this petition. The said "Exhibit A" includes the said printed transcript of the record and proceedings of the said circuit court, including the bill of exception-, filed in said circuit court, and said bill of exceptions contains all of the testimony that was taken upon the trial of the said case in said circuit court.

The assignment of errors that was filed by your petitioner was contained in the said bill of exceptions, and they are shown on pages from 232 to and including page 249 of the said printed tran-
d script from said circuit court, and they are hereby referred to and made a part of this petition and application.

Sixth. That the said case came on to be heard in the said circuit court of appeals on the twenty-eighth day of July, 1892, before the Honorable Judges McKenna and Gilbert, circuit judges, and Hon. Hiram Knowles, district judge. Upon the thirtieth day of January, 1893, the said court of appeals rendered a judgment affirming the said judgment of said circuit court; that the said circuit court of appeals filed its opinion and decision in writing, at the end of which was its order that the judgment of the circuit court must be affirmed with costs. Said opinion and decision are contained in the certified copy of the record of said circuit court of appeals, "Exhibit A," hereto attached, and the same is hereby referred to and made a part of this petition.

Seventh. And thereupon, on the first day of March, 1893, your petitioner filed a petition for rehearing, said petition praying *for* a certificate of division upon the propositions of law might be made to this honorable court if such petition for rehearing be denied; and thereupon, on the first day of May, 1893, the said petition for rehearing was denied by the said United States circuit court of appeals for the ninth circuit, and any certificate of division of opinion as to any proposition of law involved was also denied; but the mandate of said cause has been stayed until the tenth day of July, 1893, for your petitioner to file this its petition for a
e writ of certiorari.

Eighth. Your petitioner is advised and believes that the said judgment of the said United States circuit court of appeals in the said cause in sustaining the judgment of the court at the circuit is erroneous, and that this honorable court should require the said case to be certified to it for its review and determination under and in accordance with the provision of the sixth section of the act of Congress entitled "An act to establish circuit court of appeals," and to define and regulate in certain cases the jurisdiction of the courts of the

United States, and for other purposes, approved March 3rd, 1891, the said case being made final in the said circuit court of appeals by the said act.

Ninth. It is not the intention of your petitioner to review the assignment of errors as a whole as above identified, but to insist upon at least five of such assignments and the findings and judicial conclusions thereunder as exhibiting clearly the erroneous character of the judgment complained against, believing that if neither of such assignments of error will secure the granting of this petition and the reversal of such judgment it would be futility to urge any of the other assigned errors. Such assignment of errors herein referred to and insisted upon as demanding and insuring the granting of this petition and the reversal of the judgment below are as follows:

f First. There is no evidence in this record submitted under the rules and decisions of this court upon which the verdict and judgment below can be sustained.

Second. The claims of the patent in suit are two in number. The first claim, by the admissions and findings of all parties—court, litigants, and counsel—being a narrow, detailed combination claim, and the second claim, by the admissions and findings of the court, litigants, and counsel, being an all-sweeping, broad claim, and there being no contention that there is any evidence in this record to differentiate or distinguish any measure of damages for the employment of the alleged inventions of either claim separately by the defendant, and, the second claim being clearly invalid and so found by the court of appeals, the judgment must fail.

Third. The second claim of the patent in suit being the all-sweeping, broad claim, and so found and admitted by the court, litigants, and counsel, and there being no evidence in this record as to any value or utility of the patented devices except as identified by said second claim, and such second claim being clearly invalid from the record, and being so found by the court of appeals, the judgment must fail.

Fourth. It being clearly apparent from the record in this case that the defendants do not infringe either claim upon any rightful construction that can be given to the patent for its sustainment, the judgment must fail.

g Fifth. The patent in suit as to both the first and second claims being clearly void by reason of its failure to exhibit patentable novelty or invention, the judgment must fail.

Your petitioner particularly states and shows that all of the testimony that was taken in the case that had any bearing of any nature or kind upon the issue of damages is in the said printed record, "Exhibit A," on pages 15, 16, 21, 22, 23, 24, 25, 48, 49, 50, 51, 52, 76, 77, 95, 96, 97, 100, 101, 103, 104, 126, and 127.

That the substance of all said testimony is as follows: On said pages 15 and 16 the plaintiff testified that nearly all the sewing-machine companies had purchased shop rights from him, but none of the amounts paid for such shop rights were given.

On pages 21 and 22 the number of sewing machines that the de-

fendant had sold in the northern district of California was admitted in part and proved in part, but no testimony was given there or elsewhere as to the prices at which the machines were sold or of any profits that were realized on the sales.

On pages 23, 24, and 25 the plaintiff testified that his patented wheel cost from ten to eighteen cents each less to manufacture than the old-style wheel, and on that basis he estimated his damages at that rate per wheel or per machine; also that, in 1879, he made his wheels and sold them, putting them on the Singer machines; that they cost fifty cents each, and he sold them for three dollars each; that he made between two and three thousand and then had
h to quit because the Singer Manufacturing Company came out themselves and used his patented wheel; also that the Singer sewing machine, with his patented device, was worth five dollars more than the old Singer machine, but he gives no data on which he bases his estimate of value, the estimate being a mere arbitrary one without any data on which it could be based.

On pages 48 and 49 the plaintiff testified that the first shop right that he sold was to the Eldridge Company; that that company had infringed the patent first and he threatened it with a lawsuit and they settled. He could not remember the amount he received, but thought about one thousand dollars.

On pages 51 and 52 the plaintiff was questioned with regard to his sales of shop rights. All the testimony on pages 50, 51, and 52 was given under the cross-examination of the plaintiff, in an effort, on the part of the defendant, to find out for what compensation the plaintiff had sold his patented rights, but the effort failed for the reason that the information could not be obtained from the witness.

On pages 76 and 77 a witness named Brown was asked what, in his judgment, was the difference in value between the machine described in the plaintiff's patent and that used by the defendant prior to the patent. The question was objected to, the objection was overruled, and the witness answered that, in his opinion, the wheel was worth to a sewing machine, as a proportionate
i part of it, five dollars over and above the old style.

On pages 95, 96, and 97, under cross-examination, the same witness stated that the Brill wheel did not increase the selling price of the machine; that the value of five dollars was an estimated value; that he did not know that the machine ever sold for any more on account of having the Brill attachment; that he did not know of any instance in which the attachment of Brill's wheel controlled the market for sewing machines; that he did not know whether machines were made any cheaper on account of having Brill's wheel to it or not, and that he had not any actual data by which a mathematical calculation of the exact value of the Brill wheel to a machine could be made; that it could not be got at that way; that there was no actual data that he knew of.

On page 97, on redirect examination, he testified that his idea was that those machines with Brill's wheel in them would sell with

greater ease and rapidity and more readily than they would with the old devices.

On pages 100 and 101 a witness named Glover testified that he would consider a machine with the Brill — in it would be of from three to five dollars greater value than with the old wheel in it.

Under cross-examination, on pages 103 and 104, the same witness was asked whether he had any data by which he could estimate the value of the Brill wheel, or measure it in dollars and cents, and he replied: "We cannot measure that in dollars and cents any more than you can measure any other part of that machine in dollars and cents;" that he based it on the selling quality of the machine; that the Brill wheel did not cut any figure in the price of the manufacture of the machine; that he did not know whether machines ever brought any higher price to the manufacturer on account of having the Brill wheel on it or whether it ever sold for any higher price, and that he did not know where the sale of a machine was lost where it did not have the Brill wheel upon it, and that he did not know of any instance where the sale of a machine was ever made or ever lost on account of having or not having the Brill wheel upon it.

On page 126, a statement of the net sales of sewing machines made by the defendant in the northern district of California from the years 1880 to 1889, inclusive, was put in evidence. In this statement the number of the machines only was given, and not the prices at which they sold.

On page 127 the plaintiff was recalled for further cross-examination, and a telegram from B. Eldridge was shown to him, the telegram reading as follows:

"Dated BELVIDERE, ILL., 21 *Oct.*, 1891.

"To the Singer M'f'g Co., San Fran.

"April ninth, eighteen hundred eighty-one, one hundred dollars.

"B. ELDRIDGE."

The plaintiff was shown the telegram for the purpose of refreshing his recollection, and was asked if it was not on the ninth day of April, 1881, that he sold Mr. Eldridge the shop right, and if the price received was not exactly one hundred dollars. The plaintiff objected to the question upon the ground that it was immaterial as to the price he got, and the court sustained the objection.

The foregoing is all the testimony that was taken on the trial of the case that in any manner referred to the issue of damages either directly or indirectly, approximately or remotely, or in any manner or way whatever.

Your petitioner further states that a printed brief was filed by the defendant as a part of its argument in said case in said circuit court of appeals, and after the case was decided by said court it also filed a printed petition for a rehearing therein.

A copy of said brief, marked "Exhibit B," and of said petition for a rehearing, marked "Exhibit C," is hereto attached and made a part of this petition.

That both upon the oral argument of said cause and also in said printed brief, as shown on pages 47 to 55 thereof, and in said petition for a rehearing, as shown on the first twenty-two pages thereof, the defendant urged upon the said court of appeals the errors in regard to the issues upon the question of damages, which it claimed that the circuit court had made upon the trial of the cause, and did all that it could to obtain a correction of those alleged errors, but that, notwithstanding its arguments and appeals to the said court of appeals, the said court refused to notice or pay any attention to the said alleged errors of the said circuit court or to the arguments of *the* your petitioner thereon and entirely ignored the same; that the said court of appeals did not, either in the opinion which it rendered in deciding said cause or in its judgment or in its decision overruling the said petition for a rehearing, once mention or refer to the said issues made upon the subject of damages, or to the alleged errors of the said circuit court, or to the points or arguments made or authorities cited by your petitioner thereon, but instead of so doing the said circuit court of appeals refused to notice or pass upon said alleged errors in any other way than to affirm said judgment without mentioning the subject of damages at all.

The said brief, "Exhibit B," and the said petition for a rehearing, "Exhibit C," contain the points and authorities and references to the record as to the testimony taken and alleged errors committed that are necessary to a full understanding of this petition, and to them reference is hereby made.

Tenth. Your petitioner avers that the said Andrew Brill, defendant in error in said circuit court of appeals for the ninth circuit, has threatened to bring further action against your petitioner upon said letters patent in all of the circuits of the United States and the districts thereof for infringement of said letters patent, upon the law side of the court, and to collect further damages from your petitioner in each and every circuit thereof and in each and every district in said circuit throughout the United States, in the same manner, end, and effect as the suit brought and judgment obtained in this action, and your petitioner believes that such suits will be brought, and if this record and judgment is allowed to stand numerous judgments may be obtained against your petitioner in such actions.

Eleventh. The importance and gravity of the questions involved and the rights of this particular litigant is clearly apparent when it is remembered and stated that, as to this particular litigant, your petitioner, judgment may be obtained against it in all of the different districts of the nine circuits in the sum of $10,000 in each district as identified by the judgment herein, and that the aggregate of such judgments and sums of money will be $560,000 if the judgment in this case is allowed to stand upon the record as here made.

The importance and gravity of the questions involved in the interests of jurisprudence and uniformity of decision appears to your petitioner to be clearly apparent when it is remembered and stated

that if this judgment, verdict, and finding is allowed to stand the entire line of decisions and judgments of all the Federal courts will be overruled, disregarded, and ignored, and the precedent established not only of the rendition but the permission of the rendition of verdicts and judgments where there is not any evidence to sustain the same, but to sustain verdicts and judgments upon evidence directly contrary to their sustainment and fatal thereto, and that the inadvertence of conclusion of the court as above identified involves weighty and serious matters, not only to your petitioner, but as to all citizens of necessity confronted hereafter with the same conditions.

Your petitioner thus respectfully submits that the questions here presented and involved should be authoritatively and finally adjudged by this honorable court upon and after a full presentation to this court of the merit of said questions on the part of the petitioner and the defendant in error, if he may so desire.

Wherefore your petitioner respectfully prays that a writ of certiorari may be issued out of and under the seal of this court, directed to the United States circuit court of appeals for the ninth circuit, commanding the said court to certify and send to this court, on a day certain to be therein designated, a full and complete transcript of the record and all proceedings of the said court of appeals in the case therein entitled "The Singer Manufacturing Company, plaintiff in error, *vs.* A. Brill, defendant in error, No. 49," as identified by the transcript of the record.

To the end that the said case may be reviewed and determined by this court as provided by section six of the act of Congress entitled "An act to establish circuit courts of appeals and to define and regulate in certain cases the jurisdiction of the courts of the United States and for other purposes," approved March 3rd, 1891, or that your petitioner may have such other or further relief or remedy in the premises as to this court may seem appropriate and in conformity with the said act, and that the said judgment of the circuit court of appeals in the said case and every part thereof may be reversed by this honorable court.

And your petitioner will ever pray, etc.

THE SINGER MANUFACTURING CO.,
By W. F. PROCTOR, *Vice-pres't.*

CHARLES K. OFFIELD &
M. A. WHEATON,
Sol'rs and of Counsel for Petitioner.

UNITED STATES OF AMERICA, } ss:
District of California, }

Milton A. Wheaton, being duly sworn, says that he is one of the attorneys and counsel for the petitioner, The Singer Manufacturing Company, above named, and as such had personal charge for said petitioner of the case in the foregoing petition mentioned in the circuit court of the United States for the northern district of California and in the United States circuit court of appeals for the ninth cir-

cuit; that he has read the said petition by him subscribed, and that the facts therein stated are true to the best of his information and belief.

M. A. WHEATON.

Subscribed and sworn to before me this 12th day of June, A. D. 1893.

[Seal G. T. Knox, Notary Public, City & County of San Francisco.]

GEO. T. KNOX,
Notary Public.

p STATE OF NEW YORK, } ss:
City and County of New York, }

William F. Proctor, being duly sworn, deposes and says:

I am vice-president of The Singer Manufacturing Company, the above-named petitioner, and have read the foregoing petition. The same is true of my own knowledge except as to those matters which are stated upon information and belief, and as to those matters I believe it to be true.

W. F. PROCTOR.

Subscribed and sworn to before me this 24th day of June, A. D. 1893.

[Seal George Taylor Brown, Notary Public, New York.]

GEORGE TAYLOR BROWN,
Notary Public.

We hereby certify that we have examined the foregoing petition, and that in our opinion the petition is well founded, and the case is one in which the prayer of the petition should be granted by this court.

CHARLES K. OFFIELD,
M. A. WHEATON,
Counsel for Petitioner.

q EXHIBIT "A."

No. 49.

Transcript of Record.

United States Circuit Court of Appeals for the Ninth Circuit, October Term, 1891.

THE SINGER MANUFACTURING COMPANY, Plaintiff in Error,
vs.
A. BRILL, Defendant in Error.

Upon writ of error to the circuit court of the United States for the northern district of California.

Filed April 20th, 1892.

Endorsed: Filed April 26, 1892. F. D. Monckton, clerk.

1 *Complaint.*

In the United States Circuit Court, Ninth Circuit, in and for the Northern District of California.

A. BRILL, Plaintiff,
vs.
THE SINGER MANUFACTURING COMPANY (a Corporation), Defendant. } Complaint.

A. Brill, the above-named plaintiff, complaining of the said defendant, and for cause of action alleges:

I.

That the plaintiff is a citizen and a resident of the State of California, residing in the city and county of San Francisco.

II.

That the said defendant is a foreign corporation, duly incorporated and organized as such, under the laws of the State of New Jersey, before the year 1872. That such corporation was organized for the purpose of carrying on, and ever since has been and is now engaged in, the business of manufacturing, using and selling sewing machines, in all the States and Territories of the United States. That said defendant, as such corporation, has a general and permanent office in the city and county of San Francisco, in the State of California, where its principal business in said State of California is carried on, and where its principal place of business is located. That it has a general agent and manager of its business duly appointed thereto by defendant, residing in said city, county and State, who is now, and has been ever since its said incorporation, in charge of defendant's said business, conducting and carrying on the said business of said defendant, in said State of California, and in said city and county.

III.

That the statutes and laws of the State of California provide and require that the defendant, and all foreign corporations during business in this State, shall designate in writing some person residing in the county in which the principal place of business of such corporation is located, upon whom process in any suit commenced in the State of California against such corporation may be served, and shall file such designation in the office of the secretary of state of the State of California, and that it shall be lawful to serve
2 upon such person any process issued in such action. And it is also likewise further provided that where such designation shall not be made as aforesaid, it shall be lawful to serve such process on any person who shall be found within the said State of California, acting as the agent of such corporation or doing business for them.

IV.

That the defendant has failed and neglected to file with the secretary of state of the State of California, such designation of a general agent and manager to reside in said State of California, and of a person upon whom service of process might be made in any action brought against it in said State of California, as required by the laws of said State as aforesaid. That Willis B. Fry is the general agent and manager of the defendant, and resides in the city and county of San Francisco, and as such general agent and manager, duly appointed by said defendant as aforesaid, is carrying on and conducting a large and extensive business for defendant in said State, in the manufacture, use and sale of sewing machines.

V.

That heretofore, to wit: before the 2nd day of July, 1872, the plaintiff, A. Brill, was the original and first inventor of a certain new and useful invention, viz: improvement in treadles for sewing machines.

VI.

That the same was not known or used by others before the invention thereof by the plaintiff, and at the time of the plaintiff's application for a patent thereof had not been in public use for two years, nor abandoned, nor was it proved to have been abandoned.

VII.

That, being the inventor thereof as aforesaid, upon due application therefor, letters patent of the United States, numbered 128,460, were on the 2nd day of July, 1872, duly issued to the said plaintiff, A. Brill, granting and securing to him, his executors, administrators and assigns, for the full term of seventeen years from the date thereof, the full and exclusive right and liberty of making, using and vending to others to be used, the said inventions and improvements throughout the United States and Territories thereof.

VIII.

That said letters patent were issued in due form of law, under the seal of the Patent Office of the United States, and were signed by the Secretary of the Interior, and countersigned by the Commissioner of Patents of the United States, and dated the day and
3 year last aforesaid, a description whereof and of said inventions more fully appear in said letters patent, which said letters patent are ready in court to be produced by the plaintiff, or a duly certified copy thereof.

IX.

That prior to the issuing of said letters patent, all proceedings were had and taken which were required by law to be had or taken previous to the issuance of letters patent granting special privileges, rights and liberties for new and useful inventions.

X.

That since the issuance of said letters patent to him as aforesaid, the plaintiff has been in the constant exercise of the rights and privileges thereby granted and confirmed to him, and has granted privileges to use said invention under said letters patent, to various parties in that part of the United States lying east of the Rocky mountains, but in no other place or places.

XI.

That the defendant well knowing the premises, and contriving to injure the plaintiff, has, since the 2nd day of July, 1872, unlawfully and wrongfully, and without the consent or allowance, and against the will of plaintiff, made and sold a large number, to wit: fifteen millions of treadles for sewing machines, containing the inventions and improvements described and claimed in said letters patent.

XII.

That as plaintiff is informed and believes two millions of such treadles, so made and sold by defendant as aforesaid, were sold by the defendant between the date of said patent and the 2nd day of July, 1889, within the State of California, and within the jurisdiction of this honorable court, and in violation and infringement of the exclusive privileges, rights and liberties secured to the plaintiff by said letters patent, and contrary to the law and form of the statutes in such cases made and provided.

XIII.

And plaintiff further avers that on account of said acts of the said defendant herein set forth, the plaintiff has been greatly injured and damaged, and deprived of great profits which he might and otherwise would have derived from the said inventions and letters patent, and that he has sustained actual damages therefrom and thereby in the sum of one hundred thousand ($100,000) dollars, and that by force of the statutes aforesaid an action has accrued to him, the plaintiff herein, to recover the said actual damages as the court may see fit to order and adjudge.

4 Wherefore, plaintiff prays judgment against the said defendant for the sum of one hundred thousand ($100,000) dollars actual damages, together with such further sum not exceeding in the aggregate three times the amount of such actual damages as the court may adjudge, and for costs of suit.

SCRIVNER & SCHELL AND
C. W. M. SMITH,
Attorneys for Plaintiff.

STATE OF CALIFORNIA, }
City and County of San Francisco, } ss:

A. Brill, being duly sworn, deposes and says that he is the plaintiff in said action; that he has heard read the foregoing complaint

and knows the contents thereof; that the same is true of his own knowledge, except as to the matters therein stated on his information or belief, and as to those matters he verily believes it to be true.

A. BRILL.

Subscribed and sworn to before me this 14th day of May, A. D. 1891.

[SEAL.] E. M. MORGAN,
Notary Public.

(Endorsed:) Filed May 14, 1891. L. S. B. Sawyer, clerk.

Summons.

UNITED STATES OF AMERICA:

Circuit Court of the United States, Ninth Circuit, Northern District of California.

A. BRILL, Plaintiff,
vs.
THE SINGER MANUFACTURING COMPANY (a Corporation), Defendant.

Action brought in the said circuit court and the complaint filed in the office of the clerk of said circuit court, in the city and county of San Francisco.

The President of the United States of America, Greeting, to the Singer Manufacturing Company (a corporation):

You are hereby required to appear in an action brought against you by the above-named plaintiff, in the circuit court of the United States, ninth circuit, in and for the northern district of California, and to file your plea, answer or demurrer, to the complaint filed therein (a certified copy of which accompanies this summons), in the office of the clerk of said court, in the city and county of San Francisco, within ten days after the service on you of this summons—if served in this county; or, if served out of this county, then within thirty days—or judgment by default will be taken against you.

The said action is brought to recover from you, said defendant, the sum of one hundred thousand dollars, actual damages, together with such further sum not exceeding in the aggregate three times the amount of such actual damages as the court may adjudge, as damages alleged to have been sustained by the plaintiff by reason of the infringement by the defendant of certain letters patent of the United States, the property of plaintiff, the same being a certain new and useful invention, viz: improvement in treadles for sewing machines; together with the costs of this action. All of which is more fully and at large set out in the original complaint on file herein, to which original reference is hereby made. And if you

fail to appear and plead, answer or demur, as herein required, your default will be entered, and the plaintiff will apply to the court for the relief demanded in the complaint.

Witness, the Honorable Melville W. Fuller, Chief Justice of the Supreme Court of the United States, this 14th day of May, in the year of our Lord one thousand eight hundred and ninety-one, and of our Independence the 115th.

[SEAL.] L. S. B. SAWYER, *Clerk.*

(Endorsed.)

UNITED STATES MARSHAL'S OFFICE,
NORTHERN DISTRICT OF CALIFORNIA.

I hereby certify, that I received the within writ on the 14 day of May, 1891, and personally served the same on the 14 day of May, 1891, on the Singer Manufacturing Company (a corporation), by delivering to and leaving with Willis B. Fry, the managing agent of the Singer Manufacturing Company, &c., in and for the State of California, residing in this district, at the office and place of business of the defendant, at No. 22 Post street, said defendant named therein personally, at the city & county of San Francisco, in said district, a certified copy thereof, together with a certified copy of the bill of complaint, certified to by Scrivner, Schell & C. W. M. Smith, pl'ff's att'ys.

W. G. LONG, *U. S. Marshal,*
By S. P. MONCKTON, *Deputy.*

San Francisco, May 14th, 1891.

Filed May 16th, 1891.

L. S. B. SAWYER, *Clerk,*
By F. D. MONCKTON,
Deputy Clerk.

6 *Answer.*

In the Circuit Court of the United States for the Ninth Circuit, Northern District of California.

A. BRILL, Plaintiff,
vs.
THE SINGER MANUFACTURING COMPANY (a Corporation), Defendant.

Now comes the said defendant, and denies generally and specifically each and every allegation contained in the plaintiff's complaint on file herein, and says that it is not guilty of the grievances therein charged against it, or any or either, or any part thereof, and of this, the defendant put itself upon the country.

Wherefore, defendant demands judgment for its costs.

WHEATON, KALLOCH & KIERCE AND
F. M. HUSTED, *Attorneys for Defendant.*

(Endorsed.)

Service of within answer, and receipt of a copy thereof admitted this 1st day of July, 1891.

SCRIVNER & SCHELL AND
C. W. M. SMITH,
Attorneys for Plaintiff.

Filed 1st day of July, A. D., 1891.

L. S. B. SAWYER, *Clerk.*

Notice of Special Matter.

In the United States Circuit Court, Northern District of California.

A. BRILL, Plaintiff,
vs.
THE SINGER MANUFACTURING COMPANY (a Corporation), Defendant.

The plaintiff and Messrs. Scrivner & Schell and C. W. M. Smith, his attorneys, will please take notice, that upon the trial of the above-entitled cause the defendant will prove in accordance with the statute of the United States in such cases made and provided that the patentee, A. Brill, to whom the letters patent on which this suit is based were granted, and which were set out in plaintiff's declaration herein filed, was not the first and original, or any inventor of the invention and discovery described in and claimed by the said letters patent, but that the said invention and discovery was in fact invented and discovered by, and the same prin-
7 ciple was known to, and had previously been combined by others, and was described in the following United States letters patents, which were respectively granted to the following-named persons, at the following-named dates, to wit:

Letters patent numbered —, bearing date April 27, 1832, and granted to Dayton and Mallory for a "gage lathe."

Letters patent numbered —, bearing date July 25th, 1832, and granted to Simeon Presbrey Jr., for "spools and bobbins."

Letters patent No. 31006, bearing date January 1st, 1861, and granted to Eliakim Briggs for an "improvement in feeding mechanism for spoke machines."

Letters patent No. 56909, bearing date August 7th, 1866, and granted to A. L. Dewey for a "sewing-machine brake."

Letters patent No. 63494, bearing date April 2nd, 1867, and granted to John G. Folsom and W. C. Anderson for a "treadle."

Letters patent No. 112,720, bearing date March 14th, 1871, and granted to Eben B. Keyes for "treadle motion."

Letters patent No. 120,401, bearing date October 31, 1871, and granted to Henry C. Smith for a "treadle for sewing machines."

Letters patent No. 74007, bearing date February 4th, 1868, and granted to Benjamin Rutter and Hixson Hunt for "a treadle for propelling sewing machines."

Letters patent No. 65887, bearing date June 18th, 1867, and granted to Noel B. Devol for "treadles for sewing machines and other purposes."

Letters patent No. 70835, bearing date November 12th, 1867, and granted to Thomas J. Halligan for a "treadle for sewing machines."

Also, in British letters patent granted to Vincent Price by the government of Great Britain, for an "improvement in obtaining and applying motive power," dated May 12th, 1848, and numbered 12155.

Also, in British letters patent granted to Alfred Vincent Newton for an "improvement in obtaining and applying motive power," dated December 24th, 1852, and numbered 1163.

You will further take notice that the said alleged invention of A. Brill, was described in the following printed publications prior to the supposed invention or discovery thereof by the said A. Brill, to wit: In a printed publication entitled "Appleton's Dictionary of Mechanics," volume No. 1, published by D. Appleton & Company of New York city, New York, in the year 1865, at pages 795, 796, 797 and 798, of said work.

Dated July 21st, 1891.

WHEATON, KALLOCH & KIERCE AND
F. M. HUSTED, *Attorneys for Defendant.*

8 Service of the foregoing notice of special matter admitted by copy this 21st day of July, 1891.

SCRIVNER & SCHELL AND
C. W. M. SMITH,
Attorneys for Plaintiff.

(Endorsed:) Filed July 22d, 1891. L. S. B. Sawyer, clerk.

Verdict.

UNITED STATES OF AMERICA:

Circuit Court of the United States, Ninth Judicial Circuit, District of California.

ANDREW BRILL
vs.
THE SINGER MANUFACTURING COMPANY. } No. 11296.

We, the jury, find in favor of the plaintiff, and assess the damages at the sum of ten thousand and eight $\frac{30}{100}$ dollars, ($10,008.30).

N. DODGE, *Foreman.*

(Endorsed:) Verdict, filed Oct. 31, 1891. L. S. B. Sawyer, clerk.

Certified Copy of Judgment.

UNITED STATES OF AMERICA:

Circuit Court of the United States, Ninth Judicial Circuit, Northern District of California.

A. BRILL
vs.
THE SINGER MANUFACTURING COMPANY (a Corporation). } No. 11296.

This cause having come on regularly for trial on the 20th day of October, A. D. 1891, being a day in the July, 1891, term of said court, before the court and a jury of twelve men duly impaneled, Scrivner and Schell, and C. W. M. Smith, Esqs., appearing on behalf of the plaintiff, and Wheaton, Kalloch and Kierce, Esqs., appearing on behalf of the defendant, and the trial having been proceeded with on the 21st, 22nd, 23rd, 27th, 28th, 29th, 30th, and 31st days of October in said year and term, and the evidence, oral and documentary, on behalf of the respective parties having
9 been introduced and closed, and the cause, after arguments of counsel, and the instructions of the court, having been submitted to the jury, and the jury having subsequently rendered the following verdict: "We, the jury, find in favor of the plaintiff, and assess the damages at the sum of ten thousand and eight $\frac{30}{100}$ dollars (10,008.30)," and the court having ordered that judgment be entered herein in favor of plaintiff in accordance with said verdict, and for costs:

Now, therefore, by virtue of the law, and by reason of the premises aforesaid, it is considered by the court that the plaintiff, A. Brill, do have and recover of and from the defendant, The Singer Manufacturing Company, a corporation, the sum of ten thousand and eight and $\frac{30}{100}$ dollars ($10,008.30) damages, together with his costs in this behalf expended, taxed at $39.65.

Judgment entered October 31, 1891.

L. S. B. SAWYER, *Clerk.*

I hereby certify that the foregoing is a full, true and correct copy of an original judgment entered in the above-entitled cause.

[SEAL.] Attest my hand and the seal of said circuit court, this 31st day of October, A. D. 1891.

L. S. B. SAWYER, *Clerk.*

(Endorsed:) Filed October 31, 1891. L. S. B. Sawyer, clerk.

Certificate to Judgment-roll.

In the Circuit Court of the United States, Ninth Judicial Circuit, in and for the Northern District of California.

A. BRILL
vs.
THE SINGER MANUFACTURING COMPANY (a Corporation). } No. 11296.

I, L. S. B. Sawyer, clerk of the circuit court of the United States, for the ninth judicial circuit, northern district of California, do hereby certify that the foregoing papers hereto annexed constitute the judgment-roll in the above-entitled action.

Attest my hand and the seal of said circuit court, this 31st day of October, 1891.

[SEAL.] L. S. B. SAWYER, *Clerk.*

(Endorsed:) Judgment-roll. Filed October 31, 1891. L. S. B. Sawyer, clerk.

10 *Bill of Exceptions.*

In the United States Circuit Court, Northern District of California.

A. BRILL, Plaintiff,
vs.
THE SINGER MANUFACTURING COMPANY (a Corporation), Defendant. } No. 11296.

Defendant's bill of exceptions.

This was an action at law brought to recover damages for an alleged infringement of United States letters patent, number 128,460, bearing date July 2nd, 1872, and granted to A. Brill for an alleged improvement in treadles for sewing machines.

The case came on regularly for trial on the 20th day of October, 1891, Messrs. Scrivner & Schell and C. W. M. Smith, Esq., appearing as counsel for plaintiff, and Messrs. Wheaton, Kalloch & Kierce, and F. M. Husted, Esq., appearing as counsel for defendant.

A jury was duly impaneled, and thereupon the following stipulation was introduced in evidence:

"In the United States Circuit Court, Northern District of California.

A. BRILL, Plaintiff,
vs.
THE SINGER MANUFACTURING COMPANY (a Corporation), Defendant. }

It is hereby stipulated and agreed by and between the respective parties thereto, that either party may introduce in evidence on the trial of said cause in lieu of the original of United States letters

patent, or certified copies thereof, such Patent Office copies of the specifications and drawings of any of such patents as they may desire with the same force and effect as the original patents, or certified copies thereof would have, and that the dates of the filing and of the granting of said letters patent, as therein contained, shall be accepted as true.

It is further stipulated and agreed that the defendant is a corporation as alleged in the declaration herein filed, and that defendant has been doing business in said district as alleged in the complaint.

Dated August 19th, 1891.

SCRIVNER & SCHELL AND
C. W. M. SMITH, *Attorneys for Plaintiff.*
WHEATON, KALLOCH & KIERCE AND
F. M. HUSTED, *Attorneys for Defendant.*"

11 The plaintiff was thereupon sworn as a witness in his own behalf and testified as follows:

Mr. SCRIVNER:

Q. Please state your name, age and place of residence.
A. My name is Brill; Andrew Brill; I live at 22 Haight street, this city.
Q. Your age about?
A. About forty-two years.
Q. Look at that paper (handing witness paper), and state what it is.
A. It is a patent of mine.
Q. The patent sued on in this case?
A. Yes, sir.
Q. Are you the owner of that patent?
A. Yes, sir.
Q. You claim to be the inventor of the matters herein set forth?
A. Yes, sir.

The patent was here introduced in evidence marked "Plaintiff's Exhibit 1" and read to the jury, and is as follows, to wit:

A. BRILL.

Improvement in Treadles for Sewing-Machines.

No. 128,460. Patented July 2, 1872.

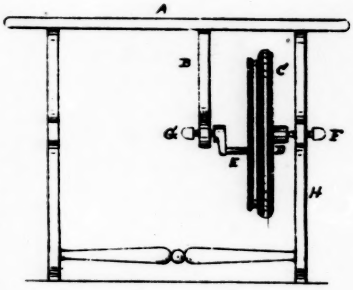

Fig. 1.

No 955
Singer Mfg Co. p. 11 2
A. Brill

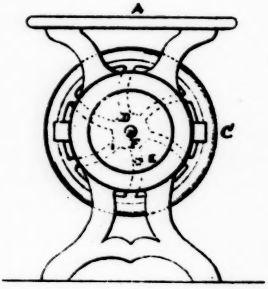

Fig. 2.

WITNESSES

Theodore Fay
C. M. Whitney

INVENTOR

Andrew Brill by
Saml. S. Boyd
Atty

"PLAINTIFF'S EXHIBIT 1."

128,460.

UNITED STATES PATENT OFFICE.

ANDREW BRILL, of St. Louis, Missouri.

Improvement in Treadles for Sewing Machines.

Specification forming part of Letters Patent No. 128,460, dated July 2, 1872.

To all whom it may concern:

Be it known that I, Andrew Brill, of the city and county of St. Louis, State of Missouri, have invented a new and useful improvement in sewing-machine treadles, of which the following is a full, clear, and exact description, reference being had to the annexed drawing making a part of this specification, in which—

(Here follows diagram marked p. 11*a*.)

Figures 1 and 2 represent, respectively, front and end views of my invention.

Similar letters indicate like parts.

The object of my invention is to increase the ease of operating the machine, diminish the noise, and provide a means of readily adjusting the bearings of the driving or fly wheel, so that it may always run true and without shaking.

A, Figs. 1, 2, represents an ordinary sewing-machine table; and B, a bracket attached to the under side of it. C is a fly-wheel and belt-wheel combined, as seen clearly in Fig. 1, having on one side a projection, D, at its axis, and on the other an arm, E, one end of which is attached to the wheel a little below its centre, as seen in Fig. 2, while the other end which projects upwardly is in a line with the axis of the wheel. A screw-pin passing through the standard H, as seen at F, Figs. 1, 2, has a pointed end, which enters a corresponding socket in the projection D, while another similar pin, G, Fig. 1, passes through the bracket B, and engages with a socket in arm E, as seen clearly in Fig. 1, thus furnishing bearings to the wheel C. To the arm E is attached the ordinary pitman, not shown, which is connected with the usual treadles, not shown. The bearings of the wheel being merely points, the friction is much lessened, and consequently the labor of running it diminished. Should the wheel become loose it can readily be brought to its bearings by tightening the screw-pins F G.

12

What I claim as my invention, and desire to secure by letters patent, is—

1. The combination of the wheel C, arm E, bracket B, standard H, and screws F G, substantially as and for the purpose shown and specified.

2. The combination, with a driving or fly wheel, of adjustable bearings, substantially as and for the purpose shown and described.

A. BRILL.

Witnesses:
SAM'L S. BOYD.
C. M. WHITNEY.

Q. Look at that, Mr. Brill, and tell me what it is.
A. This is my invention.
Q. What is the thing you have got there?
A. It is a model of my invention.

(The model was here introduced in evidence, and marked Plaintiff's Exhibit 2.)
(A sewing machine was here brought on the witness stand.)

Q. What is this machine now before you?
A. This is a Singer sewing machine, made by the Singer Manufacturing Company.

Mr. SCRIVENER: I would like to have this machine made a part of the record.

(The machine here referred to was marked Plaintiff's Exhibit 3, and referred to during the trial as Plaintiff's Exhibit 3.)

Q. Where were you living, Mr. Brill, at the time you made this invention—took out this patent?
A. I lived at St. Louis, Missouri.
Q. Now take this model, Plaintiff's Exhibit 2, with your patent, and describe the invention. Point out to the jury the elements of your first claim.
A. My first claim in this invention consists of a combination, the wheel "C," that is the fly-wheel; that is "C." Arm "E," that is the crank; bracket "B," for the support of this crank at this end; and the standard "H," that represents the leg of a machine.
13 Standard "H" holds up the crank at the other end. The screws "F" and "G" are the two point centres, fine point centres which makes the adjustable bearings.
Q. Now describe what the purposes were that you sought to overcome, or arrive at, or accomplish.
A. Well, when I first went into the sewing-machine business, I found that sewing-machine companies all were using that wheel (indicating).
Q. Is that it?
A. That is only one-half.
Q. You refer to that wheel. What do you mean?
A. This is a Singer Manufacturing Company's wheel and stand.
Q. As it existed prior to your invention?
A. Yes, sir, as it existed prior to my invention, came out——

(The stand referred to is here marked Plaintiff's Exhibit 4.)

Q. Now, Exhibit 4 is the Singer's wheel as it existed prior to the date of your patent?

A. Yes, sir.

Q. And that was what was in use by them at that time?

A. Yes, sir.

Q. Now, Mr. Brill, what led you to investigate this matter; what were the troubles you wanted to overcome, if any?

A. Well, the difficulty with this wheel was, that it ran very heavy, because it had from two and a half to three inches solid friction. That is, this is a hub that is bored through solid material, and then is a stud, and it give- it from two and a half to three inches friction, and that part ran heavier than the machine on top of the machine does. It made sewing machines run too heavy; too heavy for women to use, and there were very many complaints about sewing machines running heavy, and then the wheel after it run six or eight months, why it became loose, and shakes and wabbles from one side to the other, and many of the ladies, when I would go into their houses, would ask me to fasten their wheel—made so much noise and rattle that they could not stand it, and they wanted me to tighten that wheel up. I took several of them to my house and experimented upon trying to fasten them up, and I could not do it. There was no way of taking up the lost motion, because the hub would wear inside upward, and the stud would wear thin.

Q. Just tell the jury what you mean by the stud there, so that they will understand that.

A. That is the stud there where the hub runs on.

Q. The axle, in other words?

A. Yes, sir, the axle.

Q. Go right on.

A. And I found that it was impossible to adjust that wheel upon that stud, and there were several of the ladies—they wanted me to fasten it whether I could or not, and I worked for three or four weeks, took two or three of them trying to fasten them, because they were particular friends of mine, and I found I could
14 not do it, and that led me to think that this might be improved some way, and I got to studying on the thing, and I found that I could improve that by making that hub solid, and then I could bring those screws on point centres to go into the solid part with little cavities in there for the point centres, and I found that that thing worked satisfactorily, and it made sewing machines run very light, because I cut away about two and a half or three inches solid friction, and that wheel then did not run on more than an inch, or less than an inch friction where here it had so much and it made sewing machines run so light and easy, and at the same time when the wheel would get loose there was not any difficulty at all in adjusting it. All you would have to do would be to take hold and screw up one of these centres, to follow the lost motion; and I found that one of those wheels would last, well, an indefinite time, twenty-five, forty years, I cannot tell how long it will last—no wear out to it, because you can follow up the lost motion,

and I found that it was a good invention and superior to this, and I got a patent on it.

Q. Now, how long had you been in the sewing-machine business at that time?

A. I went into the sewing-machine business when I was seventeen years old, and I am forty-two now. I have been in the sewing-machine business twenty-five years.

Q. So that your attention was called directly to those defects in that machine?

A. Yes, sir.

Q. When you commenced experimenting?

A. Yes, sir.

Q. Go on and state the history of your invention, after you took out your patent—or, however, I will ask you this, whether you had any controversy about your patent?

A. Not at all. It went right through. There was not any controversy, or any other patent cited to us whatever.

Q. Now, go and state the history of it afterwards.

A. I would like to tell a little more of the improvements.

Q. Well, go on then.

A. This wheel, as it is, would have a treadle like that as below, and it all has a side jamb—a side motion—it is the heft of the wheel when the ladies are running it—it is the pressure of the foot when they are running it. Gives it a side jamb—a side motion and makes it run very uneven, and that is what makes so much noise when it gets loose—the thumping from side to side; and my wheel right here is so constructed that it has a centre draft for the pitman between the two centres, you see. There is no side or lateral motion here. The wheel is supported upon both sides and gives the pitman here a centre draft—a centre motion.

Q. Now, up to date of your patent in 1872, about how long had you been in the business?

A. I have been in the business twenty-five years.

Q. Up to the date of your patent, you had been in the business some time, had you not?

A. Yes, sir.

15 Q. To what extent?

A. It was considerable.

Q. Were you traveling much, state to the jury the nature of your engagement and experience?

A. I was then a salesman for sewing-machine companies in St. Louis, and of course I came in contact with not only the machines I was selling, but with all other sewing machines of all other companies' make and saw them daily, and run most of them in competition, and I saw they all had substantially the same kind of a wheel.

Q. Were you entirely familiar with all the sewing machines in existence in the United States at that time?

A. Yes, sir.

Q. You were familiar with all the different styles of wheels made?

A. Yes, I was familiar with all of them.

Q. Now, I will ask you if there was anything in existence in the United States at that time similar to your wheel.

A. No, sir.

Q. Was there any wheel—any crank wheel in existence at all?

A. No, sir.

Q. Was there any wheel in any sewing machine made at that time, having point centres like this (showing)?

A. Not like that.

Q. Was there any sewing machine at that date having crank wheel with point centres?

A. No, sir.

Q. Was there any sewing machine with a crank wheel whereby the lost motion could be taken up at all?

A. No, sir.

Q. Was there any device in use for taking up lost motion of the wheel of a sewing machine?

A. No, sir.

Q. Was there any sewing machine in existence where there was any combination, a fly-wheel with an arm and bracket, and standard and the screws?

A. No, sir; there was not anything like it.

Q. Now, state briefly the object to be accomplished by that combination of devices or elements.

A. The object of my invention is to make a sewing machine run very much easier than it has run, and in the second place make this wheel (indicating) adjustable when it gets loose, so there was a means readily there for its adjustment, so that anybody, a lady, or anybody, could screw up one of those screws and take up the lost motion, and so that it would not make any noise, and be perfectly satisfactory to everybody.

Q. Was your invention introduced to the public?

A. Yes, sir.

Q. Did it get into public use?

A. Yes, sir.

Q. State the extent and the history of its getting into use, of its adoption by sewing-machine companies, and by the defendant.

16 A. Well, nearly all the sewing-machine companies have bought shop rights from me at one time or another, for the use of this wheel. There is from twenty to twenty-three companies. The leading manufacturers of this country and two manufacturing companies of foreign countries bought shop rights of this wheel.

Q. I want to get at the use.

A. It is used quite extensively all over the world now.

Q. When did it come into public use?

A. Well, it went into public use—at first I had considerable difficulty to introduce it, and it was hard work to get sewing-machine companies to adopt it, because none as yet had started out with it, and they at first—in all patents, manufacturers are a little back-

ward, hesitate about adopting anything new, and this wheel became very actively in use in 1878—in the year 1879. It then started all over the world and became known as the Brill journal. It was in every sewing-machine man's mouth. The Brill journal, they called it, and nearly all companies adopted it, and it became a universal invention, and known all over the world.

Q. When did the defendant adopt it according to your idea?

A. The Singer Manufacturing Company commenced to use this wheel in 1879, the early part of the year 1879.

Q. Now, when they adopted that wheel, what became of their old-style wheel like that (indicating)?

A. They dropped that at once.

Q. Have you been to their shops and places of business in the East to any extent?

A. I have not been in the factory, but I have been in nearly all their sewing-machine offices in different cities.

Q. What became of that wheel, Exhibit 4, when your patent wheel went into use?

A. It went out of use altogether.

Q. Do you know as a matter of fact whether or not they used what you call your wheel—what you call your patented wheel—exclusively in the manufactories in the East?

A. Yes, sir, they used it exclusively, and dropped the other—abandoned it altogether.

Q. Now look at Plaintiff's Exhibit 3 and tell me what that is.

A. That is a wheel the Singer Manufacturing Company manufactured when they dropped that one. They dropped that and took my wheel.

Q. Just explain that machine, the wheel part of it, to the jury.

A. Now, what we claim in—our first combination claim in the patent, is a combination of the wheel "C," this is the wheel "C," the same as this wheel here, wheel "C;" arm "E," crank; this; crank here; the bracket "B" from here down, the bracket "B" here. (Illustrating on exhibits.) The standard "H," that is the leg of the machine, or represents the leg of the machine as this is, it is
17 the standard "H" this support, this end of the crank on point centres, the same as I support it, here at "H." The screws "F" and "G" are point centres with adjustable bearings—screws "F" and "G" showing the point centres to make it run light with adjustable bearings. That is the exact, full complete combination used.

Q. Go over that again.

A. The wheel "C" is this.

Q. Is there any difference in that wheel and your wheel?

A. No, sir.

Q. Now, the arm "E," if there is any difference in the arm "E" shown there in the exhibit, and the arm "E" described in your patent, show what it is.

A. My patent arm "E" is a crank, and this is a crank. They are a little differently constructed; my crank is attached to the lower

part of the wheel here, a little below the centre of the wheel, and the Singer crank is attached directly through the centre.

Q. Now I will ask you if that feature makes any difference in the operation of the device.

A. None whatever.

Q. Go on, the standard "H."

A. The standard "H" is the leg of the machine.

Q. That is exactly the same, is it not?

A. That is exactly the same.

Q. Explain the difference if any, in the screws "F" and "G" you spoke of in your patent.

A. The screws "F" and "G" are two screws I have here, the point centres.

Q. That is, you have two screws?

A. Yes, sir.

Q. One on both sides?

A. One on both sides. And there is a point centre in the screw to make it run light, and at the same time we can adjust it by either one of the screws. I have to touch but one of the screws, either one or the other—to take up the lost motion.

Q. Take defendant's machine "Exhibit 3," and show the difference, if any, in regard to the screws. They have but one screw there, have they?

A. They have what they call a sliding lug here. This screw loosens and this thing slides, so that when the wheel gets loose, they loosen their screw and shove up the slide, and that takes up the lost motion, the equivalent of my screw, just taking up the lost motion.

Q. I will ask you if it performs the same function as your screw.

A. It performs exactly the same function.

Q. Does it perform any other function?

A. It is impossible to perform any other function than to take up the lost motion.

Q. On the side they have not got a screw?

A. They haven't got a screw, but its equivalent.

Q. What have they got?

A. It is a point centre which runs in the cavity of the
18 standard "H," and it is adjustable the same as that side. When they take up the lost motion, they shove the crank over and it takes up the lost motion the same as mine.

Q. Now, explain the bracket "B."

A. That is the support of this point centre, going down here from the upper part of the stand—and——

Q. Now, in the defendant's machine Exhibit 3, they use for your bracket "B" what?

A. They use for my bracket "B" what they call the upper part of this brace that holds the stand together.

Q. Then so far as that wheel is concerned and its operation, I will ask you whether or not that piece of brace you have referred to, does or does not perform the same function as your bracket "B."

A. Exactly, performs the same function, the same thing.

Q. Now, I will ask you if this device or combination of devices of

elements in Exhibit 3, combined and arranged as in general there, increases the ease of operating the machine.

A. It does.

Q. Over what was used prior to your invention.

A. It does, makes it run very light, because it has to be run very light. Have centres and have a pitman, and they have got my invention right out and out, complete.

Q. I will ask you if that arrangement diminishes the noise of the machine.

A. Yes, sir, whenever they can take up the lost motion, that diminishes the noise.

Q. Do you find there ready means of adjusting your bearing of the wheel?

A. Yes, sir, these lugs.

Q. Then according to your idea the defendant in that Exhibit 3 gets all the benefits of your patented devices?

A. Yes, sir, there is not anything they do not get the full benefit of, of this patent, in every sense of the word.

A JUROR: I would like to know where is the difference. Is this machine of the Singers—are the points on the crank shaft or are the points on the leg and on the brace; on the points on the shaft running on the cavities in the leg, or are the cavities in the shaft?

A. I have my point on my screws.

Q. But theirs?

A. They have their points on the cranks.

Q. Right opposite?

A. Right the opposite, but it is equivalent to mine.

Q. Now, the question I would like to ask is; does this brace of theirs, what they use, that brace performs——

A. (Interrupting.) Performs my function.

Q. Yours?

A. No, sir. Oh, yes, sir, they used the brace before; oh, yes, that is old.

Mr. SCRIVNER:

Q. As I understand you this brace is an old thing?

A. Yes, sir, that was used before.

19 Q. And they took the brace just as it is?

A. They took the brace just as it was, and added this to it to accomplish my bracket result.

Q. And that part of the brace answers the same purpose as your bracket?

—. Exactly the same purpose, and gets the same use and the same result.

Q. I will ask you if reversing the cavity—that is, putting it in the end of the arms or the screw—makes any difference?

A. Not at all.

Q. Either way allows you to take up the lost motion?

A. Yes, sir.

Q. It reduces the friction, does it not?

A. Yes, sir.

Q. And you also find the means there of readily adjusting the bearings, substantially the same as you have in your patent?

A. Yes, sir.

Q. When did the Singer Manufacturing Company bring out that style of machine (indicating)?

A. They commenced to make this wheel in the early part of 1879.

Q. You know that of your own knowledge, do you?

A. Yes, sir.

Q. How long did they continue to use that style as shown in Exhibit 3?

A. They have been using that style all along until within the last two or three years; they have made a change in it.

Q. Your patent expired when?

A. July 2nd, 1889.

Q. Look at your second claim there, Mr. Brill, which is for the combination with a driving or fly wheel of adjustable bearings, substantially as and for the purposes described.

A. Yes, sir.

Q. You have stated you were familiar with sewing machines prior to your invention, and I want to get you back to that point again, whether there was any sewing machines in existence at that time which possessed adjustable bearings with the fly-wheel substantially as shown in your patent.

A. There was not anything. I was the first man that got out that wheel, and a wheel that was adjustable.

Q. Up to that time there was no combination of adjustable fly-wheel or a crank fly-wheel as shown in your patent?

A. None whatever.

(Another sewing machine was here brought to the witness stand.)

Q. What is that?

A. That is a Singer sewing machine, also manufactured by the Singer Manufacturing Company.

(This machine was marked Plaintiff's Exhibit 5.)

Q. Is that the last change that you spoke of?

A. Yes, sir.

Q. Then they began using Exhibit 3 in 1879, and continued till within the last three years, until they changed to that form, Exhibit 5?

A. Yes, sir; changed from that thing to this thing.

Q. Now, explain that Exhibit 5 to the jury, and show them what the changes are, if any.

A. The difference between Exhibits 5 and 3 is, that in this one instead of having that point centre in the lug with adjustable bearings, they reversed it and put the point centres in the brace of this machine, Exhibit 5. They have that point centre reversed, running that in the brace, bracket "B;" in other words, instead of running it in my standard "H" here in the lug of the machine—and they bring the screw through this side now—instead of adjusting it from this side, they adjust it from this.

Q. They adjust it now from the screw?

A. They adjust it from the screw, the same as I have one of my screws, just exactly the same thing, and they made another little alteration, by bringing a rib from the brace upon the standard "H," a rib along here that supports this end of the crank. Instead of having it screwed directly into standard "H," it is screwed into this brace, and the brace is equivalent to my standard "H." The point centres here at the bracket "B," the equivalent of my standard "H," the centre draft for the pitman, the adjustability—everything just exactly as I have it.

Q. Point out in that arrangement or device the wheel "C."

A. Here is the wheel "C."

Q. Arm "E."

A. The crank arm "E," or crank is that.

Q. Is that the same as this?

A. Well, it differs a little. It is just like this one.

Q. What is the only difference?

A. The only difference is that my crank is much to the lower part of the centre of the wheel, and theirs goes direct through the centre of the wheel.

Q. I will ask you if it makes any difference in the operation of that device, Exhibit 5, whether the crank is fastened above or below the centre of the wheel, or passes through.

A. Makes no difference—same results. It is a crank motion.

Q. In lieu of your bracket "B" they have adopted this part of the brace?

A. The same as the other.

Q. Now, on the other side, instead of the standard, show the jury what they have got.

A. Instead of my lug, standard "H," they have a rib tightened up here, and the brace running along down to the end of the wheel and then fastened, the lower end to the standard "H," and the upper end to the two screws.

Q. It is fastened to the standard "H" up there?

A. Yes, sir.

Q. So it is a rib fastened to standard "H" at both ends?

A. Yes, sir.

21 Q. I will ask you what function that device performs.

A. The same as mine, and the same as this—no difference.

Q. What, if any, function does that rib perform in that combination?

A. None whatever, except the one performed by standard "H."

Q. Show the jury again where the lost motion is taken up there, and how.

A. There is a recess in the bracket "B" to hold up this point centre upon the crank here, the same as the bracket "B" holds it up, and here they have a screw in this rib, connected with standard "H." The screw on point centres is to hold it up and at the same time adjustable. To use the two point centres upon the crank, they adjust the screw the same as I have.

Q. How would you take up that lost motion?

A. Take up this screw the same as I would take up my screw.

Q. In this last Exhibit 5 they only have one screw, as in the other?

A. The same.

Q. As in Exhibit 3?

A. Yes, sir.

Q. In this last-mentioned Exhibit 5 do they get all the benefits of your invention?

A. Yes, sir.

Q. I will ask you whether or not the ease of running the machine is increased, whether it runs easier than the old devices.

A. It runs one-half as light again, because it does away with all that friction. There is not half an inch friction on this wheel.

Q. Is the speed of the wheel diminished?

A. No, sir; it keeps it tight without making any noise, and makes it run light and easy; and these are point centres, and it makes it run very light.

Q. Do you find in that device, Exhibit 5, a means of readily adjusting the bearings, with the driving wheel or the fly-wheel?

A. Yes, sir.

Q. Will that machine, Exhibit 5, with this device always run true and without shaking?

A. Yes, sir.

Q. In Exhibit 3 does the device there permit the machine always to run true and without shaking?

A. Yes, sir.

Q. So that in the three devices, according to your idea, that is your patented wheel and the two devices shown, Exhibit 3 and Exhibit 5, all accomplish the same result, do they?

A. Exactly, accomplish the same result.

Q. In this last device, Exhibit 5, do you find a driving or fly wheel combined with adjustable bearings, substantially as described in your patent?

A. Yes, sir; it speaks for itself. There it is, everybody can see it; it don't take any smart man to see it. It is a very plain thing.

Mr. SCRIVNER: For the purposes of this case, it is admitted that the defendant has sold in the northern district of California 30,361 domestic sewing machines, since and including the year 1880, and up to July 2nd, 1889; is that right?

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Mr. KALLOCH: This list is furnished by the defendant with as much accuracy as they can make it, and if they were testifying from their books, it would be impossible to make it any more accurate. For the purposes of this case, it is admitted that the defendant has sold in the northern district of California 30,361 family sewing machines, between the year 1880 and July 2nd, 1889.

Q. You say that the machine represented by Plaintiff's Exhibit 3 was adopted by the defendant in the early part of 1879.

A. Yes, sir.

Q. Can you, either from the statement here or from any other

source, estimate how many machines the defendant sold, say during that portion of the year 1879 that they were using that machine, Exhibit 3?

A. Yes, sir; I would say that they sold about three thousand in the year 1879.

Q. When did the defendant change from Exhibit 3 to Exhibit 5?

A. Within the last two or three years.

Q. State when about it would be that they adopted Exhibit 5.

A. Well, three years prior to 1889 would make it about 1886. When I speak of two or three years back, I mean back of the date when the patent expired.

Q. Then, according to your information, your testimony, they adopted Exhibit 5 about 1886?

A. Yes, sir.

Q. Have you been familiar with that business during all that time?

A. Yes, sir.

Q. And the machines adopted by the defendant and sold. Now, state your knowledge of that matter, and how you got, and where you got it.

A. I have been in the sewing-machine business for twenty-five years, and I have not really been out of it—been in it ever since, and I had a business of my own in Cincinnati, a store—18 or 20 men working for me, and we were in competition with the Singer all the time, and we saw different makes of their machines every day—went in their office very often.

Q. Have you ever been in New York?

A. Yes, been in their office there, went there and tried to settle it with the Singer, for the infringement of them.

Q. Have you ever been in Philadelphia? Just state what places you have been at and seen these things.

A. I have been in nearly every city in the Union, and saw the Singer machines and my wheel on their machines.

Q. Do you know, and are you ready to testify, as a matter of fact, that during, or rather since 1879, when they adopted that machine, as shown in Exhibit 3, whether or not they ever manufactured or sold any other machines—that is, any family machines, that did not have that wheel in it?

23 A. None whatever. Every machine that they sold for family use, and even their manufacturing machines, had my wheel on it.

Q. And they were all made as shown in those exhibits?

A. Yes, sir.

Q. So that you claim that the machines sold in this district, as shown in that statement, were made like those two exhibits exactly?

A. Yes.

Q. And you also claim that the machines sold down to 1886 were made like Exhibit 3, do you?

A. Exhibit 3, like the first one. Since that time they have been selling both of them.

Q. Is there any difference in the cost in the manufacture of your wheel and Exhibit 4?

A. Yes, sir; that costs more.

Q. How much more does it cost to manufacture Exhibit 4, the old-style Singer wheel, than it did to manufacture your wheel?

A. Well, I have a figure with many of the factories in the United States, and I have——

Q. For how many years during what period of time?

A. I commenced in the year 1878.

Q. Go on, and tell what your information is, and how you got it on that subject.

A. The difference in the cost?

Q. I want you to give your experience in that regard first before you state what you have done.

A. I had wheels manufactured independent of the stands, and then we sold them to the different parties that had bought Singer sewing machines with that wheel on it.

Q. I am not talking about that, now; I want to get at the difference in the actual cost in manufacture of your crank wheel and the original stud wheel there and the cost of any other wheel then open to the public, if you know anything about it.

A. The difference will be from ten to eighteen cents on each machine, that my wheel is cheaper than that.

Q. Or any other wheel that was open to the public at that time, for use; is that what you mean?

A. That was the only wheel that was open to the public at that time.

Q. Do I understand you that all the sewing machines at that date used that sort of a wheel?

A. Yes, sir, with the exception of perhaps two or three, because they had a wheel that was on a crank shaft, and it had a support in the two legs, did not have my bracket "B." They had a crank shaft. In other words, it was a crank shaft. A crank shaft means a shaft connected with a crank, and it ran from one leg to the other, and it was not adjustable.

Q. As between your patented wheel and all other wheels that were open to the public, could be used by the public, independently, I mean, you say that there would be from ten to eighteen cents in favor of your wheel?

A. Yes, sir, from ten to eighteen cents is the difference in cost. Mine is cheaper than that, to make it. I mean cheaper than Exhibit 4, the old-style wheel.

24 Q. And do you mean all other wheels that were then open to the public?

A. Well, there was some——

Q. (Interrupting.) Well, you don't understand me; do you mean——

Mr. WHEATON: I would like the witness to do some testifying.

Mr. SCRIVNER: That is a technical question. I know what he

was trying to tell, and I might as well get at it. That wheel is cheaper than all the other wheels then known and used?

A. Yes, sir.

The COURT: Is that what you mean to say?

A. Yes, sir.

MR. SCRIVNER: So that on that basis you estimate your damages at that rate per wheel, or per machine?

—. Yes, sir.

Q. Did you ever make any of your machines and sell them?

A. Yes, sir; we made them in the year 1879.

Q. Just tell the history of it and all about it, without any questions; you know what I refer to.

A. I had wheels made, Singer wheels, and we would supply the market.

Q. What do you mean by Singer wheels; do you mean your own wheels?

A. Well, I had my own wheel, and we supplied the Singer machine; those that were sold by the Singer Company to the public with that kind of a wheel; and we had no difficulty in selling our wheel, and we got three dollars for our wheel, and we secured it right off; took this one right off and put our own right onto it, and people were glad to get it, because it made their wheels run much lighter with my wheel on them, and they paid us three dollars for the wheel.

Q. What did it cost you?

A. Cost us fifty cents.

Q. You say that you had your patented wheel made by itself?

A. Yes, sir. I made my patented wheel on point centres, with adjustable bearings. It cost fifty cents to make, and we supplied the market at large that had bought these Singer machines. The stud was loose and was not giving satisfaction, and we got three dollars apiece for them.

Q. Putting your device in the Singer machine?

A. Yes, sir; we put our devices in those Singer machines, in this Singer machine stand.

Q. About how many of those did you make and sell in that way?

A. Well, I should judge—I can't remember the exact number, but I would say from two to three thousand.

Q. Did you quit?

A. We had to quit.

Q. Why?

A. Why, the Singer Manufacturing Company, they come out and used my patented wheel themselves.

Q. In what?

A. In those machines; I mean Exhibit 3; and they cut us out of the market, because all the machines that company had then, and were selling, they had my wheel on them, and we could
25 not sell our wheel any more independent to the parties that were buying them before, and the consequence was that I

had to quit, because they had all their machines supplied, right in the factory, with my wheel on.

Q. When you speak of selling your wheel, you mean selling them to the users and purchasers of the domestic sewing machines?

A. Yes, sir; people who had bought them from the Singer Manufacturing Company, with those wheels on, and this wheel never gave satisfaction, and never did and never has given satisfaction, and never can give satisfaction, and we hadn't any difficulty in selling our patented wheels on those machines that had been sold by the Singer Manufacturing Company.

Q. Has that wheel, or any wheel like it in Exhibit 4, ever been used by anybody since your wheel came out?

A. No, sir; they have abandoned that altogether.

Q. Were you able at the time the Singer Company brought out their machines as shown in Exhibit 3 to supply the market with your wheel, had they not interfered with you as you have stated?

A. Yes, sir.

Q. You were able to manufacture all those wheels that would have been received by the public, were you?

A. Yes, sir.

Q. Did you have those wheels made by some manufacturing company?

A. Yes, sir.

Q. And you paid them fifty cents each?

A. Paid them fifty cents apiece, and we got three dollars for them.

Q. Is the Singer sewing machine with your patented device, your combination there, as described in your patent, your crank wheel, of any greater value than the old Singer machine?

A. It is.

Q. Well, how much?

A. Well, I will put it moderately and I will put it low; it is worth five dollars more.

Q. That is, each machine with your wheel in it is worth more than the old Singer machine?

A. Than the machine with this wheel; yes, sir.

Cross-examination.

Mr. WHEATON:

Q. Can you, by unscrewing one of these screws and screwing up the other, move your crank shaft endwise?

A. Yes, sir.

Q. And you move that crank—by doing that you are able to adjust the fly-wheel so that it is in immediate line with its connection with the treadle underneath?

A. Yes, sir.

Q. In doing that, do you have to use both of those screw points?

A. You can use both or one, just as you choose.

Q. How could you move that crank shaft endwise by using only one of them?

A. The friction is so slight that when the wheel is taken up it does not amount to much, one way or the other.

26 Q. I am not talking about the taking up of the slack of the bearing of the wheel, but just showing it one way so as to adjust it with the line of the treadle. How could you shove that shaft endwise by the use of the wheel?

A. When you pick up the lost motion that throws the shaft over to the other centre.

Q. I am not speaking about lost motion. Just leave that question all out. Supposing that both of these screws "F" and "G" were tight in the end of the crank shaft, as they ought to be, to make it run well, and no lost motion there——

A. Yes, sir.

Q. Now, can you, by unscrewing the screw "F" and screwing up the screw "G" shove the crank shaft endwise towards the letter "F"?

A. Certainly, you can.

Q. Could you do that same thing with the use of only one of those screws, where there was no lost motion to take up?

A. If there was not any lost motion there, there would not be any necessity of taking it up.

Q. Just answer the question. Can you move that crank shaft where there is no lost motion to take up, endwise, by the use of one of those screws only?

A. You mean if both screws were tight, and then screwed one screw tighter, whether you can move it.

Q. Supposing that both screws were tight, and that your fly-wheel or band-wheel was not immediately in line with the pitman of the treadle underneath. Now, by unscrewing one of the screws and screwing the other you could move the whole shaft of the fly-wheel endwise with the shaft, could you not, so as to bring it in line with the treadle connection?

A. Yes, sir.

Q. Could you do that if there was only one of those adjustable screws?

A. I could not unless there was lost motion.

Q. Where there was no lost motion, could you do it?

A. You wouldn't want to do it where there was no lost motion.

Q. No matter whether you want to or not, could you do it?

A. Don't see any necessity of that.

Q. Could you do it—could you shove that crank endwise, where it was already tightened by the use of one of those screws only?

A. If that screw is there and this screw is here, and this wheel becomes a little loose——

Q. But I do not want the wheel loose. You are putting that in the question, that is not in it. Supposing your crank shaft is tight with both screws?

A. Yes, sir.

Q. All ready to run, except that the pitman connection is not tight, you want to move that crank shaft a quarter of an inch one

way, so as to bring it in line with the treadle, could you do that by loosening only one screw?

A. No, sir; you could not. We never do it that way. They are generally adjusted for the pitman direct below.

27 Q. When they are made perfect to adjust with the pitman direct with the treadle, if as a matter of fact one end of the sharp point of the crank which defendants use should wear away a quarter of an inch, if they take up the lost motion by taking up the screw at the other end, would that then throw the fly-wheel a quarter of an inch out of line of the connection with its treadle?

A. That would not amount to anything.

Q. Whether it would amount to anything or not, would it do it?

A. Yes, it would do it with my screws, if I let them set still the same way, and the friction on that amounts to so much that they have to adjust the pitman with the treadle. They generally work all right. There is no difficulty there at all.

Q. Then there is an office which is performed by the two screws, that of moving the fly-wheel sidewise one way or the other, which cannot be performed by one screw alone, is there not?

A. Yes, sir.

Q. Now, how is it that you are able to testify so positively that no other sewing machine ever had those adjustable screws put in them, in the United States?

A. Because——

Q. (Continuing.) Until you did it?

A. Because I have been in the business for twenty-five years and been connected right with sewing machines, with the sewing-machine business wholesale and retail, and I have seen the different makes of machines from the different factories, and I have been in the different factories in the United States, nearly all of them.

Q. You don't undertake to say that you have seen every sewing machine that was made in the United States up to that date, do you?

A. I have seen nearly all that were made, yes, sir.

Q. Every individual sewing machine, do you mean?

A. Well, there may have been some machine company that existed three or four months and dropped out of the market, that I didn't see.

Q. I don't mean all of the kinds of machines, but all of the individual sewing machines.

A. All of the leading machines, yes, I have seen them all.

Q. Which one of the companies was it that used a crank shaft prior to the time that you made this invention?

A. It was one of the companies.

Q. Which one of the companies was it that you referred to in your direct examination?

A. The Wheeler & Wilson was one of them, and the Florence Sewing Machine Company was another, and the Elliptic Sewing Machine Company, which has gone out of use a good many years, they were another.

Q. I now show you a Patent Office copy of a patent numbered

56909, granted to A. L. Dewey, August 7th, 1866, and ask you whether you have seen that before?

A. I had not seen that before except in this patent.

28 Q. I mean have you seen a copy of that same patent before?

A. Only since this suit has been commenced, what you cited.

Q. Have you seen it so that you understand it?

A. It has never been in the market to see.

Q. Since this suit has been commenced your attention has been called by the attorneys for the plaintiff to that patent?

A. Yes, sir.

Q. Since your attention was called to it have you examined a Patent Office copy of the specifications and drawings, the same as the one I hand you?

A. I have examined this patent thoroughly, yes, sir.

Q. In that patent, is there a crank shaft?

A. There is a crank shaft in this patent, yes, sir.

Q. How is that crank shaft secured at the ends?

A. This crank shaft runs apparently the same as though it may run on point centers. It was never used and never put into the market.

Q. That is something you cannot know.

A. If it had been in the market I would have seen it.

Q. There have probably been a great many things that you have not seen. Now, according to the description in that patent, are there two screws used there for holding the ends of the crank shaft?

Mr. SCRIVNER: He has asked you if according to that description there is anything to show there were any screws there in connection with the shaft?

A. No, sir, there is not. The inventor does not claim anything of the kind in his specifications.

Q. Does he describe anything of the kind?

A. He does not describe anything of the kind.

Mr. WHEATON:

Q. What are shown in the drawings there about holding the ends of the crank shaft?

A. It may be misconstrued, or different parties may have different opinions on this patent, because it is a wooden model, because the invention consists of another device on this shaft altogether. The invention here is the spring "D" connected with a shaft for the purpose of making a sewing machine always run one way, so it cannot run back, so it won't break the thread of the needle.

Q. It is a sort of a lock on the shaft?

A. It is a lock on the shaft to make a machine always run the same way, so as not to break the thread.

Q. Do you understand the drawings?

A. I do.

Q. Do you find in these drawings a crank shaft?

A. I find in these drawings a crank shaft.

Q. What do you find in those drawings that hold those crank shafts at each end?

A. Well, it appears as though it might be point centres.

Q. According to the appearances there, is it not exactly the
29 same kind of screws that you use?

A. The screws are old; the point centres are old. I don't claim the original invention of those. They are old. All I claim is a combination of old devices brought together for a new purpose and a new result.

Q. The question is whether you find in that patent there described the same kind of screws used for holding that crank shaft which you have described in your patent for holding your crank shaft?

A. Yes, sir, may aim to be. This is a wooden drawing for the purpose of showing off another invention altogether.

Q. What do you mean by a wooden drawing?

A. A wooden stand. It represents a sewing-machine stand made of wood merely to show off the points of the invention.

Q. Where do you find any authority to say that it was made of wood, or represents anything made of wood?

A. The appearance of it looks as though it was drawn of wood. It might be iron.

Q. It is not a wood cut?

A. It might be iron.

Q. It is an ordinary photo-lithographic cut which the Patent Office use?

A. Yes, sir.

Q. Where do you find a word in that patent that says that it is made of wood, or any intimation of that kind?

A. It would not make any difference if it was made of iron. It would not alter the case at all.

Q. You have repeatedly said that was made of wood, two or three times over, if I understood you right.

A. Yes, sir.

Q. Now, I want your authority for saying so, and I ask that not for the purpose of the importance of the question itself, but for the reliability of your testimony.

A. Well, the models, when they are sent to the Patent Office, are generally made of wood, and they are light, and do not take much weight, generally made of wood. This might be made of iron. I don't know, but it don't cut any figure in the case. This device, as shown, has never been on the market, or been seen by anybody.

Q. How do you know that?

A. Because it has never been seen. It has never been in the market.

Q. How do you know that Mr. Dewey, who obtained that patent, did not make just such a sewing-machine crank, and attach it to those screws just as it is shown in that patent?

A. Well, now, I will show you that he could not have done it. In the first place, a sewing-machine stand cannot be made to work in that way, the way this is made. If a sewing-machine stand—in

a sewing-machine stand there has got to be room on top of the legs of the machine for a table. It has got to sit on, and we see here, there are round hubs on top of the stand, with point screw centres, apparently similar to go through, if they are point centres.

30 That is a round part on top of the stand which a sewing-machine table never could sit on to start on, and consequently the wheel, as it is shown there, must always be under the table, so that it can work, and here it shows it away on top of the table where you put your head on the table, and to work away up in the air above that stand, as that does. If anybody can use that for a sewing-machine stand, I will give them one hundred dollars, or a thousand dollars. That is positive evidence that it has never been made.

Q. Where in that do you find anything to show where the top of that stand table came?

A. You couldn't set it on there at all. There is no place for it, no room for it.

Q. Do you find the fly-wheel in the ordinary position do you not?

A. I do not. I find the fly-wheel away above the table and the head of the machine.

Q. Where do you find the table there?

A. The table must be attached straight on the upper part of the stand.

Q. Where do you find any representation on that drawing?

A. It could not be put on, it is not represented there.

Q. Then how can you say that that fly-wheel goes on top of the table when it is not represented there?

A. A blind man can see the fly-wheel goes here above the shaft. Here is the shaft and anybody can see that the fly-wheel set on top of the shaft, and the shaft must be under the table, so that that part can be set on the stand. There it is. It speaks for itself.

Q. What reason have you for supposing that Mr. Dewey would not set the top of his table above the fly-wheel as in ordinary cases?

A. Could not do it.

Q. The specification says this: "F represents the fly-wheel of the ordinary crank-treadle motion, to which the invention is attached, as shown in figures 1 and 3." Now, if it is a fact that "F" represents the fly-wheel on the ordinary treadle motion in sewing machines, the fly-wheel would certainly be placed under the table, would it not?

A. Yes, sir, the fly-wheel would have to be under the table.

Q. In representing his lock, which is the subject-matter of the invention, there was no occasion of showing the table at all, was there?

A. No, sir.

Q. And the table was not shown in that table at all?

A. No, sir.

Q. Neither is the standard shown which supports the table?

A. Yes, the stand is there which supports the table.

Q. How can you say that the stand supports the table, when there is no table shown?

A. He has got to have something support his table, he cannot put his table in the air.

Q. But he has got to have the table there near the standard?

A. Support it himself. He has put the standards there which support the table, shown clearly. Everybody can see that.

31 Q. Just think a moment and see if he shows the standards which support the table.

A. I say there it is. It shows itself.

Q. Do you consider that answer as reliable as the remainder of the testimony you have given?

A. I do. I say he could not put a table on there, and he aims to show those are the legs of the machines, but he could not put a table on there.

Q. How do you know what he aims to show those legs for, further than what he describes in the patent?

A. That is a construction he got up to show off his own invention. Now to make that sewing machine always run one way, he could not put that on top without a shaft, and he had to have a shaft in order to show off his invention. These here represent the two legs of the stand.

Q. Does it represent any part of those legs above the crank shaft of the fly-wheel?

A. How do you mean?

Q. Just what I say. Does this drawing represent any part of those legs which you have just given your testimony about in the Sihger sewing machine that is in evidence, that is above the bossing of the crank shaft?

A. That is what it represents.

Q. Represents the legs above the bossing of the crank shaft?

A. Below.

Q. My question was, does it represent any of the legs above the crank shaft?

A. You don't want any legs above the crank.

Q. You do in any machine, do you not?

A. Want legs above the crank shaft?

Q. Yes.

A. You mean above this table?

Q. No, above the crank shaft, nearly way down to the floor, below the table.

A. I don't know as I understand what you mean; I believe I can answer it when you make yourself clear, what you mean.

Q. You have the crank shaft shown here, have you not?

A. Yes, sir.

Q. The centre of the fly-wheel?

A. Yes, sir.

Q. And here in this drawing you have also the crank shaft, coming through the centre of the fly-wheel?

A. You have it on the upper end of this stand here, where you could not put a table on with the wheel running way above the table.

Q. Now I ask you to point out on this drawing any indication of where the table is placed, or would be placed if he put it there?

A. If there were a table put on it would have to be placed on top of there, because there is no other place to put it, and could not put it there because the fly-wheel would knock it off. The fly-wheel goes above the shaft, and the fly-wheel has got to be under this table.

Q. In that case would this fly-wheel which is represented
32 by "F" fill this description of the specifications: "F represents the fly-wheel of the ordinary crank-treadle motion?"

A. Yes, sir.

Q. That would be a fly-wheel of the ordinary crank-treadle motion, would it?

A. Yes, sir, it represents that.

Q. And yet come on top of the table?

A. Yes, sir, it represents that, but it would not come on top of the table and work. It is impossible. I will give a man a thousand dollars to show that it will work. It cannot. It has got to be under the table.

Q. Of course it has. Now, this lock that he puts on is a lock on the crank shaft, is it not?

A. What do you mean by a lock?

Q. The lock which is the subject of the invention, special device?

A. Here is spring "D" that is attached to a shaft.

Q. Well, that is a crank shaft?

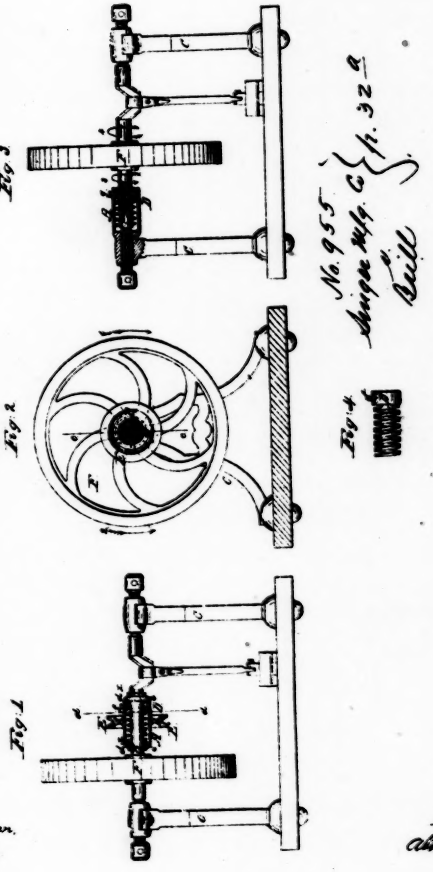
A. That is a crank shaft, yes, sir. Here is the crank part and this rest is the shaft part and here is the spring "D" on the shaft, and his object of the invention is to make this sewing machine run the true way, this way. If the wheel run that way, it breaks the thread and the needle has to be re-threaded, and it is quite a nice little item to have that machine run forward and true, so it don't run back. That is the object of the invention.

(United States letters patent No. 56909, dated August 7th, 1866, issued to Albert L. Dewey, for an "improvement in stop devices for sewing machines," were here introduced in evidence as part of the defense and we marked "Defendant's Exhibit 1," and are in words and figures as follows, to wit:)

A. L. Dewey.

Sewing-Machine Brake.

No. 56,909. Patented Aug. 7, 1866.



Witnesses,
Richard C. Morgan.
Wm. Tolu. to Dewey

Inventor,
Albert L. Dewey.

DEFENDANT'S EXHIBIT 1.

UNITED STATES PATENT OFFICE.

ALBERT L. DEWEY, of Westfield, Massachusetts.

Improvement in Stop Devices for Sewing Machines.

Specification forming part of Letters Patent No. 56909, dated August 7, 1866.

To all whom it may concern:

Be it known that I, Albert L. Dewey, of Westfield, in the county of Hampden, State of Massachusetts, have invented a new and improved stop device; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

(Here follows diagram marked p. 32*a*.)

Figure 1 is a vertical section of my invention taken in the line *c c*, figure 2. Figure 2 is a transverse section of the same taken
33 in the line *d d*, Fig. 1. Fig. 3 is the same view as Fig. 1, showing a modification of the invention. Fig. 4 is a detached view of a spring pertaining to the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved stop device designed for sewing machines and other mechanism where it is desired to cause a revolving shaft always to move in one and the same direction.

B represents a shaft supported in a suitable framing, C C, having two bosses, d_x d_x, upon it, rabbeted or grooved at their peripheries to receive a hollow or tubular hub, A, which is fitted loosely on the hubs or bosses d_x d_x, the flanges *e e* formed by the rabbets or grooves in the latter preventing the hub from moving laterally thereon, as will be seen by referring to Fig. 1.

D is a spiral spring, which is placed on the shaft B, between the two bosses d_x d_x, and consequently within the hub A. One end of this spring is connected to the hub A, as shown at *f*, the opposite end of the spring being free or disconnected.

The hub A is provided with a pulley, E, extending around its circumference, said pulley conveying its motion to the machinery to be driven by means of a belt.

F represents the fly-wheel of the ordinary crank-treadle motion, to which the invention is attached, as shown in Figs. 1 and 3.

The operation is as follows: The action of the spring D is peculiar. When the shaft B is caused to revolve in the direction of the arrow 1 the spring D will be contracted and bear upon the shaft B, so as to cause the hub A, connected therewith, to rotate

also, the spring forming the only connection between the shaft B and the hub A, and consequently driving any machinery attached by means of the belt before referred to; but if by accident the shaft B should be started in the opposite direction, as shown by the arrow 2, Fig. 2, the spring D will instantly relax and allow the shaft B to revolve loose within the hub A, thereby causing the pulley with its attached machinery to stop until the proper direction is given to shaft B, as above described.

In certain cases the pulley A may be dispensed with and the spring D applied to shaft B, substantially as shown in Fig. 3, said spring being stationary by having one end, g', firmly attached to the framing C. In this case the shaft B will be allowed to move only in the proper direction. For instance, if the attempt be made to revolve the shaft B in the direction of the arrow 3, Fig. 3, the spring D will contract and bear on shaft B, and couple it with the framing C by means of the connection shown at g', Fig 3; but when the motion is given in the direction of arrow 4, Fig. 3, the spring D relaxes and allow- the shaft to revolve loose within it.

I claim as new and desire to secure by letters patent—

34 The spring D, applied to shaft B, either with or without the hubbed pulley A E, substantially as shown and used, all arranged to operate in the manner substantially as and for the purpose set forth.

ALBERT L. DEWEY.

Witnesses:
RICHARD E. MORGAN.
MRS. HELEN L. DEWEY.

Mr. SCRIVNER:

Q. Do you want to make any correction in your testimony?

A. I want to say that I was asked a question by the attorney for the defendant about the different machines, whether I had seen all the different makes, and I said yes. But I have been told that I perhaps misunderstood the question, and the attorney meant had I seen every sewing machine that was turned out of the factory. That would be impossible for me to say; I would have to be in the factory and have to see every machine turned out. What I had reference to was the different makes that factories turn out, but not every particular machine itself.

Mr. WHEATON:

Q. I show you the drawings of certified copy of a United States patent, granted July 26th, 1832.

Mr. SCRIVNER: I understood you that was one of the patents given notice of.

A. This is July 26th, 1832, No. —, granted to S. Presbrey.

The COURT: Is that one of the patents you have given notice of in the pleadings?

Mr. KALLOCH: It is.

Mr. WHEATON: It is only to show the state of the art, securing fly-wheels and driving shafts.

Q. State whether you understand that drawing there or not (showing witness drawing of Presbrey patent).

A. I understand it.

Q. What does that drawing represent?

A. A turning lathe.

Q. Has it a crank shaft, with fly-wheel and band-wheel attached?

A. It has two cranks connecting with a shaft, and has point centres, but there are two cranks with the shaft.

Q. Are those point centres the same as those described in your patent?

A. I expect they are, yes, sir.

Q. What difference does it make, the fact that the shaft has two cranks instead of one?

A. It makes the construction of the whole thing different.

Q. Please explain what you mean by that.

A. I mean if there are two cranks connected with the shaft, it differs materially when there is a crank shaft with only one crank in the shaft.

Q. Are those cranks both turned by the same foot piece?

A. Yes, sir.

Q. The same treadle?

A. Yes, sir.

Q. It has two pitmans from that treadle connecting with the crank shaft?

A. Yes, sir.

35 Q. And the crank has two shafts instead of one?

A. Yes, sir.

Q. Do you know what reason there was for having two cranks instead of one in a shaft of that kind?

A. Where you have two cranks on a shaft, this outside part will give an equal bearing on each centre by equal pressure, on the foot bearing down, and aids in making the wear and tear as much on one centre as on the other.

Q. Does that become necessary on account of the length of the shaft?

A. Yes, sir, it would be better where the shaft is a long one.

Q. I understood you yesterday to state that the point centres or pointed screws were not new. How long had you known of their being used for the fastening of any kind of a machinery prior to your adopting them?

A. I have known point centres to be used on different constructions for many years past.

Q. How many years before you got up your invention had you known of those screw points being used for point centres for hanging crank shafts?

A. I think that I could go back twenty-five years that I have seen point centers used.

Q. Were those prior to your invention, that you saw, adjustable screws?

A. Yes, sir, for different purposes.

Q. Had you ever seen them used in turning lathes?

A. No.

Q. Where you ever a machinist?

A. I claim that I am a machinist. I have been working at machinery for twenty-five years.

Q. Did you ever learn the trade of a machinist?

A. I worked twenty-five years right along with mechanics.

Q. Did you ever work at the regular trade of a machinist?

A. No, sir.

Q. Did you ever work at any other kind of machinery than sewing machines?

A. Not that I remember.

(Certified copy of United States letters patent dated July 26th, 1832, issued to Simeon Presbrey, Junior, for an improvement in the method of truing, equalizing and finishing the ends of spools or bobbins used in spinning, were here introduced in evidence, and were marked "Defendant's Exhibit 2," and are in words and figures following, to wit:)

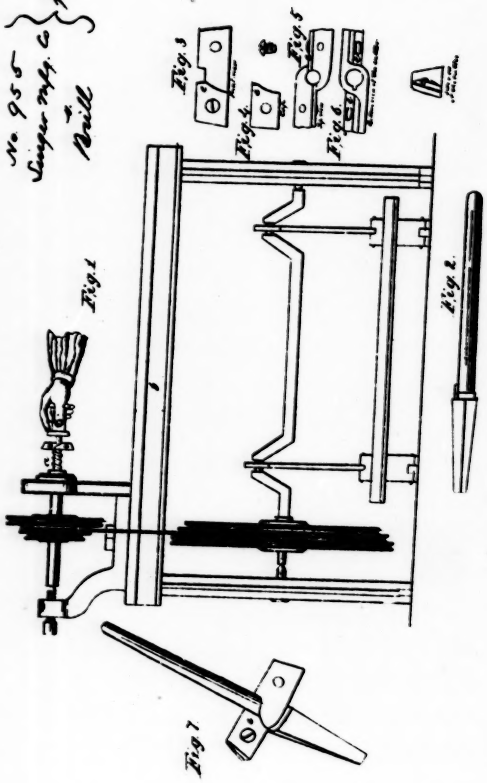
S. Presbrey, Jr.,

Turning Regular Forms.

Patented July 26, 1832.

No. 95 of Singer Mfg. Co. } M. 362

Built



SIMEON PRESBREY, Jun'r, of Canton, in the county of Norfolk & State of Massachusetts.

Letters Patent.

The schedule referred to in these letters patent and making part of the same, containing a description in the words of the said Simeon Presbrey, Jun'r, himself of his improvement in the method, by means of a revolving cutter, or cutters, of truing, equalizing and finishing the ends of spools or bobbins used in spinning.

36

(Here follows diagram marked p. 36*a*.)

To all persons to whom these presents shall come Simeon Presbrey, Jun'r, of Canton, in the county of Norfolk & State of Massachusetts, cotton manufacturer, sends greeting:

Be it known that I, the said Simeon Presbrey, Jun'r, have invented and applied to use a new and useful method by means of a revolving cutter or cutters of truing, equalizing & finishing the ends of bobbins *of* spools used in spinning, specified in the words following, viz: It is well known that wooden bobbins or spools are liable to draw irregularly—fitting up unequally and often breaking the thread or yarn—the cause is not often readily perceived and much time is lost before the bobbin can be adjusted to run well. The principal cause is to be found in a want of trueness of the bobbin at the end on which it rests, which may happen by the common method of making them or by warping afterwards.

The application of a revolving cutter or cutters to enable the maker to finish the end of the bobbin in a uniform and exact manner, and the spinner to correct and repair such as may have changed by warping is the object of this invention. Into the mandr*i*l of a common turning lathe I fit a pin or mandr*i*l of the size of the spindle on which the bobbin runs, with cutters having their edges at right angles with the pin or diverging to suit the required form of the bobbin. The cutters are forged from one piece of steel with a nave or hub, & make a radius, arm, or spoke to the pin or mandr*i*l & fastened with a steady-pin so as to turn with it; they are about three-fourths of an inch wide and set at an oblique angle with the circle of revolution; when only one or two cutters are used I have caps screwed on the face, on the principle of a double iron plane iron.

To use the aforesaid cutters they are set revolving at a speed such as is commonly used for turning wood. The bobbin is then put on the mandr*i*l & held in the hand to prevent it from turning, at the same time pressing it against the cutters, which will reduce all inequalities.

In using these cutters in the making of bobbins, I propose to make it the first process, after the blocks of wood are bored and prepared for the lathe to receive the last finish, the counter-sink

thus made in the end of the block serving to direct the workman in reducing it to its proper diameter. I have described the aforesaid cutters as being fitted to a common turning lathe, but the pin or mandril of the cutters may be of sufficient length to receive a whirl or pulley and be fitted to run in standards.

37 The cutters being connected by a nave or hub, as before mentioned, can be withdrawn from the mandril for the purpose of sharpening or of exchanging for those of a different angle if required.

What I claim as new and of my invention is the application of the aforesaid revolving cutter or cutters or any modification thereof; to the making or repairing of all kinds of bobbins or spools used in spinning.

In testimony that the above is a true specification of my said improvement as above described, I have hereto set my hand the twenty-first day of June, in the year of our Lord one thousand eight hundred and thirty-two.

SIMEON PRESBREY, JR.

Witnesses:
THOMAS TOLMAN.
THOS. I. JOHNSON.

J. F. F.; M. P. H.

Mr. WHEATON:

Q. I now show you another United States letters patent, bearing date April 27th, 1832, granted to Dayton and Mallory, for a gauge lathe, and ask you how many point centres there are?

Mr. SCRIVNER: We do not claim to be the inventor of point centres or braces or brackets or standard in any of the elements described in this patent.

Mr. WHEATON:

Q. Please look at the drawings in the patent last mentioned and state how many screw-pointed centres you find there.

A. The first cut on this patent—the first cut is the same as the cut, as the shaft with two cranks and centres and the other, I think, has only one centre on the left-hand side.

Q. Is there any difference, so far as you can see, between the operation of the screws which hang the crank shaft and the operation of the adjustable pointed screws as used in your patent?

A. They are about the same, I think, but this construction is a different construction from my patent.

(Certified copy of United States letters patent, dated April 27th, 1832, and granted to Dayton and Mallory, for a gauge lathe, were here introduced in evidence, and marked Defendant's Exhibit 3, and are in words and figures following, to wit:)

GILES DAYTON & ANDREW MALLORY, citizens of the United States.

Letters Patent, Dated April 27th, 1832.

38 The schedule referred to in these letters patent and making part of the same, containing a description in the words of the said Giles Dayton & Andrew Mallory themselves, of their improvement in the whip-engine for turning whip-stocks.

The whip-engine is made of wood and plated with iron or any other metal in those places exposed to friction, or may be made all of metal; and is constructed in the following manner, viz:

First, say, a stick or piece of timber 2½ inches square and 2 feet in length, called the jack, at one end of which is attached a smaller piece, called the slide, of about 1½ foot long, 3 inches wide and 1 inch thick, placed transversely, and fastened by bolts or tenons so as to form a T, and is called by that name. The slide which forms the T must project about 1 inch from the lower edge of the jack piece, that it may fall into a groove prepared for it and in which moves back and forth to any distance required while in operation. Upon the under side of the jack in a lateral direction is a piece of timber of the same size, but 4 or 5 inches shorter at the end next to the slide. This piece is called the cat, and is fastened to the jack by means of a hinge or butt, so that the other ends (being of equal length) may open and shut like tongs. These ends are reduced at the extremities in a horizontal direction to the thickness of about ½ an inch, in form of tenons; these tenons enter and move in grooves prepared for them, and which are so graduated as to cause the opening and shutting.

Within 5 or 6 inches of the opening end of the jack is placed the cutting iron, which is shaped so as to answer the double purpose of gouge and chisel. The edge of cutting iron describes about the 4th part of a circle of 2½ inches diameter. From one end of the cutting iron is turned a shank about 3 inches in length and of sufficient strength to support it against the force required to perform its work.

At the place where the cutting iron is placed in the jack the timber is rounded away till it corresponds with the circle of the edge, and an opening or mouth is made sufficient to discharge the chips or shavings. The use of the cat piece is to confine the rod (whip, or whatever is turned) to its proper position against the edge of the cutting iron; and in addition and for the same purpose, *is* attached (on the back side, opposite where the cutter begins its work) *are* two pieces or blocks of about five inches in length and two in breadth and one in thickness, mitred at one end of each piece; one of these pieces is fastened on the cat stationary. The other so placed on the jack as that the mitres shall come together, and fastened only by a pivot at one end, so that it may move, or graduate on the mitre, as the tongs open and shut. The use of these mitred pieces is to form

a support to the whip (rod or whatever) and keep it from re-
39 ceding in a horizontal direction from the cutting iron any faster than the whip or rod is intended to increase in size. The shape of whatever is turned depends on the distance of the grooves in which the two tenons move and by which they are governed.

N. B.—Any engine of the above dimensions will turn a rod or whip to any size required, say from $\frac{1}{8}$ of an inch to 2 inches diameter, either of equal size, or tapering, or of unequal swells, &c.

This engine is readily attached to any common turning lathe and made of the mandrel, or chock, to give motion to the whip-rod, &c., while the other end is placed in the engine, which moves up (directed by the grooves) till it approaches the mandrel, the whip is then taken out and the engine thrown back for another to be placed.

The grooves being movable are readily adapted to the turning of broom handles, hoe handles, curtain rods, rake stakes, umbrella staves, chair rods, walking canes, &c., and may be extended to almost any size.

General observations.—The above-described engine or machine for turning whips, or anything that is long and limber, we claim to be an invention, or discovery, of our own, and not an improvement on anything ever used for that purpose.

GILES DAYTON.
ANDREW MALLORY.

Witnesses:
AUGUSTUS COLLINS.
ENOS ALVERD.

Received & recorded June 19th, 1841, and examined.—W. G. C., J. F. F., M. P. H.

(Here follows drawing.)

(Here follows diagram marked p. 39*a*.)

Mr. SCRIVNER: What do you want to offer that for?

Mr. WHEATON: For the purpose of showing a crank-shaft pin driving a belt wheel or pulley wheel secured by adjustable screws just the same as in your patent. The second claim of your patent reads, as follows: "The combination, with a driving or fly wheel of adjustable bearings, substantially as and for the purpose described." That claim says nothing about sewing machines, does it?

A. That is what it refers to, this particular mechanism and construction.

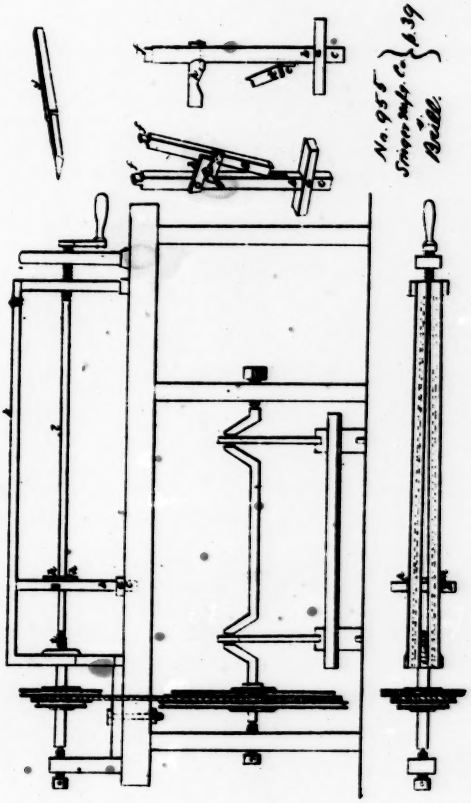
Q. Why is it that in each one of the drawings in the patents presented to the jury they do not fall within this description,
40 the combination with a driving and fly wheel, and so on?

A. Well, sir, that is for a different construction and for a different purpose.

Dayton & Mallory.

Gage Lathe

Patented Apr. 24, 1832.



Q. What does that claim say as you understand it? It is your own claim.

A. My first claim gives the construction.

Q. No, I am talking about the second claim?

A. The construction is that construction there, the adjustable screws, is to be taken up by that construction to the crank shaft, but in this other patent there are two crank shafts.

Q. You have a driving or fly wheel there, and you have a crank?

A. Yes, sir.

Q. That crank has two ends to it?

A. Yes, sir.

Q. Has it any shaft or not?

A. It has no shaft at all.

Q. Where does the crank end?

A. The crank is a crank in itself.

Q. What is the projection "D" on the side of the fly-wheel mentioned in the patent?

A. I have that here in the patent, right here where this centre comes in for support. It is a part of a solid hub, with a little pivot for the centre to work in.

Q. Is that any part of the crank?

A. No, sir.

Q. The claim says nothing about a crank, does it?

A. Yes, sir; it says the arm "B"——

Q. I am asking you about the second claim; all my questions will relate to the second claim. The second claim commences as follows: "The combination with a driving or fly wheel of adjustable bearings, substantially as and for the purposes shown and described." Do you find a driving or fly wheel in the patent presented to you last, on the turning lathe?

A. They are not the same as mine, no.

Q. I did not ask you if they were the same. I asked you if you found a driving or fly wheel there?

A. Yes, sir.

Q. Do you also find adjustable bearings which carry that driving or fly wheel?

A. Yes, sir.

Q. What else do you find in your second claim except the combination of adjustable bearings? What other elements?

A. I find in the second claim, it is to be used substantially as and for the purposes shown in the patent.

Q. I am simply calling for the specific device, without referring to their construction, mentioned in that combination. Do you find any other device in that combination of the second claim other than the driving or fly wheel and the adjustable bearings?

A. That isn't the way this reads. It says "substantially as and for the purposes shown and described."

Q. What devices are mentioned in the words "substantially as and for the purposes shown and described"?

A. It shows the construction of that patent.

41 Q. I am not asking you for the construction; on the contrary, I do not refer to the construction. What specific devices are named in the combination of the second claim, as you understand it, without referring to how they are constructed?

A. If I did not have my first claim, my second claim would be no good; I couldn't use it at all.

Q. Why?

A. I wouldn't have a proper combination.

Q. Why not?

A. Just because I never would have invented it. I cannot use my second claim without my first.

Q. Why wouldn't the patent be perfectly good if the first claim were left out?

A. It might for another construction of the lathe, but not for my invention.

Q. You have a lathe?

A. Yes, sir.

Q. Then, do I understand what is described in this second claim, if you left out the question of construction entirely, is the same thing which is shown in the two patents mentioned? Defendant's Exhibits Two and Three?

A. Yes, sir.

Q. It would be the same thing, outside of the question of construction?

A. Yes, sir; it would.

Q. This combination calls for the driving or fly wheel and adjustable bearings. What difference is there in the construction between the driving and fly wheel of your patent and the driving or fly wheel in the two lathes shown in the two Exhibits 2 and 3?

A. Do you mean what is the difference in the construction of the fly-wheel?

Q. I mean the construction of the fly-wheel only.

A. I would like to see the patents, please. In the first place you want the fly-wheel without any of the other construction, just the fly-wheel alone?

Q. Yes; the difference in the construction of the fly wheel in those lathe patents?

A. There is considerable of a difference here. In this wheel it has three or four grooves, or cavities, to run belts in. I have but one.

Q. What difference does that make in the operation of the fly-wheels?

A. It makes a vast difference in making the spindle on the top run faster or slower.

Q. What is there in the fly-wheel described in your patent which is not found in the fly-wheel of the two lathe patents?

A. You haven't got those three or four different offsets to make it run faster or slower.

Q. That is not in yours?

A. Yes, sir.

Q. What do you find in your patent that is not found in the lathe patent?

A. There is another difference here between this wheel. To move it. I mean it hasn't got that projection D on one end where my point centres rests; the shaft goes clean through, and does not in mine.

Q. Does not the projection D in this, form that change of shaft?

A. No, sir.

42 Q. What is a shaft?

A. A shaft is a straight bar.

Q. All straight bars are not shafts, are they?

A. Yes, sir.

Q. Is not the projection D, so far as it extends, a straight bar?

A. I wouldn't consider it so.

Q. Where do you see any crooks or bends in it?

A. It is just a little bit of a lump.

Q. Do you find that projection D a lump, as you call it, constructed in the defendant's machine, just as you show it in your patent?

A. No, sir.

Q. Then, in that respect, the defendant's machine is not like the patent?

A. It is substantially the same; yes, sir.

Q. I refer to the one question of construction?

A. It makes no difference whether the shaft runs through the centre of the wheel, or whether it is attached the way I have it, projection D. It gives the support on the point centre.

Q. Does not the point centre give the support in those two lathe patents just the same?

A. Yes, sir.

Q. Why do you make such a distinction between shafts in the lathe patents and projection D in yours, and yet, when it come to comparing yours with the defendant's machine, which does not have that projection, say it makes no difference?

A. The projection D on my wheel is attached and cast right onto the wheel; that and the wheel is one. It has a small cavity or socket to hold the point centre on that side of the crank.

Q. Now, those two lathe patents in them, will the two point centres take up all lost motion just the same as yours?

A. Yes, sir.

Q. Does it stop the rattle and noise of the machine just the same as yours?

A. Yes, sir.

Q. Are the cranks between these two points—have they a centre bearing?

A. No, sir.

Q. As contradistinguished from the wrist pin, which is on one side of the wheel, Plaintiff's Exhibit 4?

A. I say it is not a centre. It has not an equal bearing.

Q. Is it a crank which comes between the two centre points?

A. It is a crank that comes between the two centre points. These

are generally heavy wheels and the pressure of the one that makes this centre wheel about four times as much as on this wheel on account of the weight and throws it out of proportion, that is, one centre wheel more than another does not run true.

Q. There are none of those differences between those ordinary centre bearings as used in lathes, and the same centre bearings in your machine?

A. No, sir; I do not think there is any difference.

Q. You said you knew of all the general makes of machines
43 in use prior to the time of your invention. Were you well acquainted with the Florence machine?

A. Yes, sir.

Q. Please look at this device and state what it is.

A. That is a Florence machine. I do not have to read the name of it. I can tell by looking at it at a distance.

Q. How is the needle bar attached in that machine?

A. Attached on the point centres.

Q. Are those point centres adjustable?

A. Yes, sir.

Q. Are they the same kind of point centres you used in your machine?

A. Yes, sir, I think so.

Q. Would they take up lost motion the same as they take it up in your machine?

A. No, sir.

Q. Why not?

A. If you were to take up lost motion on one centre it would throw the arm out of gear. It won't sew. This arm wants to set in a perfect position, so that the needle has to go down through the plate, and if the needle goes down that way, it will break off every time. It won't sew at all, and you can't use the machine.

Q. What are those point centres put in there for?

A. They are put in there so that when there is friction on machinery, they have to be very accurately adjusted, both sides so as to make that set in the proper position, so that it is not either one way or the other. If it is it will throw it out of place, and it is no account.

Q. In that case do they have to use both of those screws?

A. Yes, sir, but I do not have to do that.

Q. Why did you put them both in if you did not need them?

A. I did not need any screw at all; I might have put in two or three.

Q. If there is any lost motion in this needle bar, can it be taken up by the use of these screw points, just as well as it can be taken up by your machine?

A. You could, but it throws the machine out of gear. No man could take up the lost motion of this machine with one screw, and make it work.

Q. Could not this needle bar be adjusted if there was a mere point centre on one end of this needle-bar shaft and an adjustable screw in the other?

A. It wouldn't work at all, and you know that as well as I do.

Q. Then is there a difference in that combination between having the two pointed screws or having only one pointed screw?

A. Yes, sir; that is a difference and a big difference.

Q. In the case of this then, if one end of the shaft were more pointed and lay in a socket and fit, it would not be the equivalent of the adjusting screw would it?

A. No, sir.

Q. Wouldn't they work just the same?

A. No, sir.

Q. What would be the difference?

A. You have to adjust that the same on both sides, if you want to keep your machine to work.

44 Q. See how these operate. The same as in the Florence machine, or in changing the description in the patent. The patent says, a screw pin fastened through the standard. The screw pin passes through it?

A. Yes, sir.

Q. As seen at "F." He says a pointed end. That screw has a pointed end?

A. Yes, sir.

Q. Which enters a corresponding socket in the projection D?

A. That is on D. That arm is the projection.

Q. How long is that projection on your machine?

A. It is a small projection. I never measured it. This may show a good deal longer than it needs to be. It merely represents a solid part cast, and the wheel it has, is simply to hold it in the little cavity to that point centre, to support it. I would judge it is about a quarter of an inch, maybe an eighth of an inch.

Q. What is the diameter of the fly-wheel you use?

A. I can't tell. I don't see what figure that cuts. I have never measured it.

Q. Comparing it with that one?

A. That seems to be 8 inches and a half as near as I can measure it. My wheel is about the usual—the one that I used was I should judge about that size.

Q. About twelve inches?

A. But then I make my wheels according to how they are wanted, any size.

Q. You will admit, I suppose, that this end of this needle-bar shaft in the Florence machine is a projection?

A. No, sir, that is no projection.

Q. What is there in the definition of projection, using the word in its ordinary general sense, which is not found in the last half inch of that needle-bar shaft?

A. This (indicating) is termed an arm. You do not call that a projection at all, that is an arm. It is for a different purpose, it is for a different operation. They could not take my projection D, and put it on here, and make this machine work whatever.

Q. Does this point of the screw enter on the socket at the end of this needle-bar arm?

A. Yes, sir.

Q. Is there another similiar pin on this side, which passes through this standard?

A. Yes, sir.

Q. Does that engage with the socket in the needle-bar arm?

A. Yes, sir.

Q. Your patent reads here, "A similar pin, G, figure 1, passes through the bracket B, and engages with a socket in arm E." So that there is an arm both in this and the Florence machine?

A. Yes, sir.

Q. This is for convenience, the screw is exactly the same as the number 3 here shown?

A. The same as that big one.

Q. You say this is the kind the defendant used up to that
45 date?

A. They have used that up to the year 1886, somewhere along there.

Q. Is there a single screw-pin in this at all?

A. You don't have to have the screws in there at all.

Q. When was it the defendant first used any pointed adjusting screws, for adjusting its fly-wheel in any of its machines?

A. In the year 1879.

Q. And your patent was then seven years old?

A. About.

Q. Up to 1879 the defendant used this kind of a machine?

A. Yes, sir.

Q. In what form did the defendants use the adjusting screw in 1879, a pointed adjusting screw?

A. I don't know of any.

Q. When did the defendant first use a pointed adjusting screw for this balance wheel or fly-wheel?

A. I don't know of any.

Q. Did not the defendant ever use one of those pointed adjusting screws?

A. Not to my knowledge.

Q. Is it not in one of the machines there, your Exhibit No. 5?

A. That is what I call the infringement. You are going back of that.

Q. You do not understand the question. Did they ever use the pointed screws at any time before or after your invention?

A. They did not use the screw directly.

Q. Has the defendant ever used a pointed and adjusting screw, for suspending its fly-wheel?

A. Not to my knowledge.

Q. As I understand, that is a pointed adjusting screw, is it not?

A. Yes, sir.

Q. You understand whether the defendant has ever used those adjusting screws at any time in the history of the world, up to date, or not, do you not?

A. They have never used it exactly as I have. Not the same screws.

Q. What is the difference between the pointed adjusting screws they now use, and those in your patent?

A. They simply reverse the point centres. They put them on the crank, while I have the point centres on the adjustable screws. They simply reverse the points. They put the points on the crank, while I use them on the screws. That is equivalent to mine.

Q. Is not this exactly the same as one of those machines up there?

A. Yes, sir.

Q. Is this not a pointed adjusting screw?

A. Yes, sir.

Q. Why did you say they have never used it up to the present time?

A. I mean this style.

Q. When did the defendant first use this pointed adjusting screw?

A. I am not quite certain, but I think that screw has been out some three years.

46 Mr. SCRIVNER:

Q. Three years before your patent expired?

A. Yes, sir; about three years before my patent expired.

Mr. WHEATON:

Q. That is about 1886?

A. Yes, sir.

Q. Up to 1886 the defendant never used any pointed adjusting screws for suspending its fly-wheel at all?

A. They did not use that, but they used its equivalent.

Q. Why do you say they used an equivalent?

A. Because it makes no difference whether these point centres are on the points or the ends of the crank, or whether they are in the screws, adjustable screws. They are point centres simply reversed, one is the equivalent of the other.

Q. So far as adjusting and taking up lost motion, could you use the point of the shaft alone, the point of the shaft or crank, whichever you choose to call it, alone?

A. Do you mean on one side?

Q. Suppose that you start your sewing machine with two point centres, one or two point centres on the end of the crank, whichever you choose to use; you suspend them in their sockets, and after a time those sockets wear away, there is lost motion, the machine rattles and makes a noise, could you, by means of those point centres on the ends of the shaft, and the screws by attaching it, take up that lost motion; in other words, a shaft that has two point centres at the end, whether you could take up lost motion?

A. No, you cannot.

Q. If you have a screw point that you can turn, and that screw point enters a socket at the end of the crank, could you then take up the lost motion?

A. Yes, sir.

Q. Then the screw point, or rather the pointed screw for taking up

lost motion, operates differently from the mere centre points in the end of the shaft?

A. That needs an explanation.

Q. Answer the question and explain afterwards.

A. I can answer yes or no, either way.

Q. I have seen many witnesses who could. Explain.

A. If you have a shaft running from one leg to the other leg, and the shaft has point centres, and they are merely projections in both ends, where those point centres rest in, and they are stationary and solid, it cannot be taken up; but if, like the Singer machine there, it has its point centres stationary on one leg, and the screw point on the other one, certainly they can take up lost motion. One way they could and another way they could not.

Q. Could this apparatus which is shown in Exhibit No. 3 be used in the Florence machine for adjusting the needle-bar arm?

A. No, sir.

Q. For the purpose of exact adjustment, this apparatus shown in the Singer machine is not the same as that shown in the Florence?

A. No, sir; it differs.

47 Q. For anything that requires an exact adjustment this apparatus used by the defendant is not the equivalent of the two pointed screws described in the patent, is it?

A. It is; in that wheel it is equivalent; yes, sir.

Q. I did not say in this wheel. I said for the purposes where an exact adjustment is required?

A. I will say this, that that wheel is exactly as correctly adjustable for its purpose and for what it is used for as this is, having the two centre screws—the purpose for which it is used for.

Q. In case you require an exact adjustment, so as to keep the driving wheel in precisely the position it was in the first instance?

A. Without a particle of variation.

Q. In that case, is this apparatus used by the defendant the mechanical equivalent of two adjustable screws?

A. Yes, sir; exactly.

Q. Suppose in this machine of the defendant the bearings had worn an eighth of an inch in time; suppose also that the connection of the pitman, with the treadle below or the band wheel above; suppose it was necessary to keep that in the same perpendicular line that it was in before, between the treadle above?

A. It is not necessary to do that.

Q. Did you not testify yesterday that in that machine there, the stud would wear thin on top?

A. Yes, sir; both on top and below, all around.

Q. Didn't you say it wore thin?

A. On the hub.

Q. What did you mean by the hub, the stud?

A. Yes, sir.

Q. Wouldn't the same thing that would make that stud wear thin on top, make that socket in the defendant's machine wear down on the pitman, instead of on top?

A. In this fly-wheel the end of the shaft is in a round socket.

Q. Does it rest on the bottom of a socket?
A. Well, through it.
Q. Is the weight of that crank on the bottom of that socket?
A. Not necessarily; it is all around in the socket.
Q. How do you manage to make the weight of that crank rest on the upper part of it?
A. It rests all around here, and even half way on each side up.
Q. This rests on the lower foot of the socket?
A. Yes.
Q. In turning, will it take any wear?
A. Here, on the point centre, do you mean?
Q. Well, that part of the shaft or crank here, the socket in use.
A. It will wear it in proportion the same as it will the point centre.
Q. Does it wear it on the bottom or on the top?
A. They wear around even; they do not wear flat.
Q. Do they not wear more at the bottom than they do at the top?
48
A. I do not think it could be shown. I think they wear even all around.
Q. I had reference to the wearing in the stationary socket.
A. Well, that socket wearing in here, I think it would.
Q. Then, if you simply shoved that socket head, without turning it in that end of the shaft, it would settle down at the bottom of the enlarged socket, where it was made larger by wear?
A. It would in proportion; yes, sir.
Q. If this end of the shaft settled down in it, it would drive the wheel so much out of the true?
A. Yes, sir; that has a proportion, that wheel works in equilibrium.
Q. Does that do that in the case where you have the two screws?
A. I think so; yes, sir.
Q. Where you use the two screws in the end of the crank, that crank will wear all the way around, won't it?
A. Yes, sir.
Q. If it would wear on the upper part of those screws, when you come to turn those screws, you turn those screws over and leave the unworn part of the screw to come in contact with the socket?
A. You could, if it would; but it doesn't amount to anything. The friction of the whole is not noticeable.
Q. In practice, does your patent amount to anything?
A. You will find it does before you get through.
Q. When did you first commence manufacturing sewing machines of any kind?
A. All the manufacturing I did in sewing machines was, first, I bought the heads from factories and had stands made in Cincinnati and wood-work, and we would set them up—set them together.
Q. When you were dealing in sewing machines, did you deal in any particular kind or in all kinds?
A. We had many kinds and varieties.
Q. What was the name of the first sewing machine you know of

that adopted in its original construction the use of those two pointed screws for suspending the balance wheel?

A. It was the Eldridge.

Q. When was that?

A. I think it was in 1878.

Q. Did you sell that Eldridge Company a shop right?

A. I did. They infringed it first, and I threatened them with a lawsuit, and they settled. Can I explain how the Eldridge came to use it?

Q. Yes, go on.

A. Mr. Eldridge, of Chicago, told me that one of his men had got out that wheel and sent to get a patent on it to the Patent Office in Washington, and the Patent Office in Washington referred him to me, refusing him a patent; and then he had advertised in the St. Louis daily papers for me, wanted to find me, so that he could buy a shop right or the patent from me. I had left St. Louis and
49 was living in Cincinnati. Then I was told this by two managers, one of them was the St. Louis and the other the Chicago. They made me a visit to my place in Cincinnati and the Chicago manager gave me an introduction to the St. Louis manager, and he wanted to know if I was the Brill who had been advertised for so much in the St. Louis newspapers for a wheel running on the point centres. I said I was. He said: "Eldridge is looking for you and wants to make arrangements, and wants to get a right from you to use your machine." I saw Mr. Eldridge at Chicago and saw he was using my wheel on his machines. Then he wanted to negotiate with me to buy the patent. My price was too big for him, and he wouldn't pay it. Then he wanted me to sell him a shop right; that is, a right so that he might sell it on his machines only. I refused to do that; I wanted him to buy the whole patent, but my price was so big he would not buy it, and then we separated. I went back to Cincinnati. He also claimed if I would not sell him the patent, or if I would sue him, he would bust my patent. It was no account. When I went back to Cincinnati I hired the best patent lawyer in that city, and they have some good ones there; I hired Ellsworth, and he informed me that Eldridge was infringing my patent.

Q. When did Eldridge buy a shop right of you?

A. Either in the year 1881 or 1882.

Q. Did that shop right run for the remainder of the term of your patent?

A. Yes, sir.

Q. How much did you sell that shop right to Mr. Eldridge for?

A. I don't remember the amount of that. I have sold so many shop rights—I think it was 23—I don't remember.

Q. You ought to remember the first one.

A. I know there was a dispute and he attempted—said I ought to let him have a shop right a little less than any one else, because he was helping me to introduce it by letting other companies see it.

Q. Was it more or less than $500 he paid you?

A. I can't remember.

Q. Was it more or less than $1,000?

A. I don't remember; I think it may have been in that neighborhood.

Q. About how many machines would he make a year?

A. He wasn't making many at that time. He only had a small concern.

Q. About how many, if you know anything about it?

A. I can't say how many they were making; it was a very small concern.

Q. Was he making 1,000 at the time?

A. I don't know whether he was making 1,000 or not. He told me he wasn't making many, and for that reason he wanted
50 the shop right, to introduce the patent for me, and *and* make it known to the other sewing machines, and then sewing machine agents, whenever they wanted to sell machines, everybody wanted to have a Brill wheel, it runs so light and easy.

Q. Who was the next party you sold to?

A. I can't recollect; I sold 23 shop rights.

Q. Did you sell a shop right to the Florence Company?

A. No, sir, they did not need it.

Q. Did you sell a shop right to the Wheeler & Wilson Company?

A. I had correspondence with them; they are using my wheel now, but I did not sell them a shop right.

Q. You did not sell the Singer Company any shop right?

A. No, sir; I tried to sell them one.

Q. You know of a machine called the Domestic?

A. Yes.

Q. Did you sell them a shop right?

A. Yes, sir.

Q. Where is that machine manufactured?

A. It is manufactured in the East; in New York, somewhere; I don't know exactly, but it is in the East.

Q. That is a company there are a great many machines made and sold by, all over the country?

A. They are nothing to compare with the Singer Company.

Q. You find them all over the United States?

A. They make a fair average of machines.

Q. What did you get for a shop right from them?

Mr. SCRIVNER: Let us understand how that was. Was that a sale or a *a* compromise, or what?

A. That was a compromise, also.

Mr. WHEATON:

Q. What year did you sell them a shop right in?

A. I don't remember that.

Q. What company or individual did you sell a shop right to, except in cases of a compromise?

A. I never sold a shop right unless I needed funds or money. I sold several, I remember, without a compromise.

Q. Which ones, that you remember now, did you sell without a compromise?

A. The St. John's.
Q. What make was theirs?
A. The St. John sewing machine.
Q. Who has ever been an agent for a St. John sewing machine in San Francisco?
A. I don't know.
Q. Have you ever seen them on the market here?
A. I haven't seen them here.
Q. Do you know any agents in New York, Boston or Chicago, of the St. John Sewing Machine Company?
A. I don't know; I think they are pretty much all through the East.
Q. Have you seen any in the cities I have named?
A. No, sir, I have not.
Q. That was a small concern, too?
A. Yes, sir.
51 Q. What did you sell a shop right to them for?
A. I got sixteen $60 or $65 sewing machines, and got them complete, amounting to a little over $1,000.
Q. That would be the retail price?
A. Yes, sir.
Q. They were making those machines at that time?
A. Yes.
Q. Were you ever making machines at that time?
A. No.
Q. You got sixteen of those machines, worth $60 or $65 apiece—that would be about $960?
A. Yes, sir, something like that.
Q. Then you had to sell them at retail before you got your money out of them?
A. Yes, sir.
Q. What year did you sell your shop right in?
A. I don't remember.
Q. Tell us as near as you can remember.
A. I think it was in the year 1885, to the best of my recollection.
Q. Did you sell any shop right to the Howe Sewing Machine Company?
A. I did not.
Q. Did you sell any to the Home Sewing Machine Company?
A. I did.
Q. When did you sell to that company?
A. I don't remember when that was.
Q. How much did you get for that?
A. I don't remember.

Mr. SCRIVNER:

Q. Was that a compromise proposition?
A. I don't remember.

Mr. WHEATON:

Q. Did you sell a shop right to the Elliptic?

A. They were dead.
Q. When did that company die?
A. A good many years ago.
Q. It is not since 1872?
A. That was the first machine I sold when I went in the sewing-machine business, and I think it went out of the market altogether. I haven't seen any of them for many years.
Q. Did you sell a shop right to the White Sewing Machine Company?
A. No, sir.
Q. Did you to the Secor?
A. I don't remember.
Q. Did you to the Victor?
A. The Victor is out of the market.
Q. Did you sell any shop right to that company?
A. I could not, because they were out of the market.
Q. How long have they been out of the market?
A. A number of years.
Q. It was in the market as late as 1880?
A. Yes, sir; I think they were.
Q. Did you sell any to the Blees Sewing Machine Company?
A. I think that had a short life, came into the market and died out.

Q. Did you sell any shop right to the Grover & Baker
52 Sewing Machine Company?
A. They haven't been making any machines for a number of years; they are dead.

Mr. WHEATON:

Q. Mr. Brill, did you never see any of those wheels made with stud pins or arranged that the slack could be taken up, referring to "Exhibit 4"?
A. I saw a wheel that was so arranged with the stud that it was conical instead of being perfectly straight. It was V-shaped—what you might call V-shaped—a V run to a point.
Q. How long ago did you see that?
A. Well, that has come out since my patent. I don't remember exactly the year, but it has not been out very long.
Q. I show you a copy of the specifications and drawings of U. S. patent, bearing date February 27th, 1872, granted to P. L. Reese for improvement in anti-rattling journals for balance wheels of sewing machines, No. 124,160?
A. What is the date of it please?
Mr. SCRIVNER: That is not in your notice.
Mr. WHEATON: It is not in anticipation either.
Mr. SCRIVNER: I shall object to the counsel attempting to put in his case now, in cross-examination of my witness.
Mr. WHEATON: I understood him to testify in the strongest language possible on his examination yesterday that his was the first that would ever take up the slack and get rid of the noise. I simply want to contradict that testimony.

Mr. SCRIVNER: He can do that and prove the state of the art when he comes to put in his case, and I don't think he can put this in at this time. I don't think it. He can cross-examine the witness on what he stated.

The COURT (after argument): It is properly a part of his case, but at the same time, I suppose he would have a right to ask him about it here on cross-examination, bearing on that statement he made. It would be touching his credibility as a witness.

Mr. SCRIVNER: If it is understood by the court and jury that that is not in anticipation of the plaintiff's invention, and the only object is to test his credibility, I will withdraw the objection.

Mr. WHEATON: No, it is not in anticipation.

Mr. WHEATON:

Q. Have you ever examined the specifications and drawings of that patent before?

A. Yes, sir.

Q. You understand it then?

A. Yes, sir.

Q. What do you find described in there, if anything?

A. This is an invention gotten up by a man by the name of Reese, and I think he lived in Kentucky somewhere, I think he lived in the State of Kentucky. It has a wheel, running—I can demonstrate it better by taking the old stand—has a wheel
53 with a side draft just like this (indicating on Exhibit "4"), with a pitman like this. The wheel hangs just like this, but it is a cone; two cones, it is called in the sewing machine itself. It is known by the name of cone, and those cones are as old as sewing machines themselves. They were used on the treadle—in the latter part of the treadle, to hold that treadle from sliding from one place to another, and they were applied on a stud like this. One of them was in the back part of the wheel in this side, and this cone was also in a V shape. It did not come to a direct point centre, but slipped on here right over this stud, and then there was another one from this side that came on. It was to take up the lost motion, and then this cone here would screw a certain set-screw tight—that it was shoved in. It was a very impracticable thing. Sewing machine companies tried it and threw it away and it was abandoned. It had an uneven side jamb, and wore those cones uneven with the hub of the wheel at the same time uneven, and it made that side jamb, and any wheel that has a side jamb has not got centre draft to the pitman, and must always run uneven and cannot run true. Now, I am ready for another question.

Q. How early did you know of the device such as you have described, where cones were used in the same form for taking up lost motion in those studs?

A. I don't consider that it ever took up the lost motion as accurately as it could in mine, and that is the reason it was abandoned.

Q. My question was: How early did you know those things to be used?

A. I don't remember exactly the year when that was used.

Q. Well, fix it as near as you can.

A. I don't know as I can state a time, because it was not known in the market.

Q. How long was it before 1872 that you knew it?

Mr. SCRIVNER: If you knew at all?

A. Didn't know that at all.

Mr. WHEATON: Is that right, for an attorney to coach his witness that way?

The COURT: I think we have too much interruption. The witness is able to testify.

The WITNESS: I did not know of it at all before 1872.

Mr. WHEATON:

Q. How do you know that that wore uneven?

A. I heard sewing-machine people talk about it and explain, and the reason why they did away with it, and I have seen some myself, machines that wore uneven, and examined them.

(Copy of United States letters patent, numbered 124,160, dated February 27th, 1872, issued to Philip L. Reese, for anti-rattling journal for the balance wheels of sewing machines, was here introduced in evidence and marked Defendant's Exhibit 4, and is in words and figures following, to wit:)

54 "DEFENDANT'S EXHIBIT 4."

124,160.

UNITED STATES PATENT OFFICE.

PHILIP L. REESE, of Mount Sterling, Kentucky.

Improvement in Anti-rattling Journals for the Balance Wheels of Sewing Machines.

Specification forming part of Letters Patent No. 124,160, dated February 27, 1872.

To all whom it may concern:

Be it known that I, Philip L. Reese, of Mount Sterling, Montgomery county, Kentucky, have invented certain improvements in anti-rattling journals for the balance wheels of sewing machines and other purposes; and that the following is a full, clear, and exact description of the same, which will enable others skilled in the art to make and use the said invention.

It is often found desirable to arrange a heavy drive or balance wheel on a short fixed journal bearing instead of securing it on a long shaft journaled in bearings at its ends—as, for example, in the balance or drive wheel used on sewing machines, or in the drive-wheel used for jewelers' lathes, where a long shaft would be in the way of the limbs of the operator—but this has been found difficult to accomplish satisfactorily in practice, for the reason that the short journal bearing soon "wore loose" and allowed the wheel to "wabble" and "rattle" or slide on the journal, which was liable to throw the belt off and cause a disagreeable jar and noise. To remedy these objections to a short journal is the object of my invention, which consists in making the head of the journal with a conical bearing face, and providing its rear and threaded end with a conical-faced follower nut, and in making the ends of the axial hole in the balance wheel with corresponding conical bearing faces, so that the balance wheel, instead of bearing on the cylindrical spindle, as in other constructions, has its bearings on the conical faces of the head and follower nut of the journal, which can be brought closer together as their faces or the bearing faces of the wheel wear away, so as to secure a solid and noiseless journal for the wheel, even after an extended use.

In the accompanying drawing,

(Here follows diagram marked p. 54*a*.)

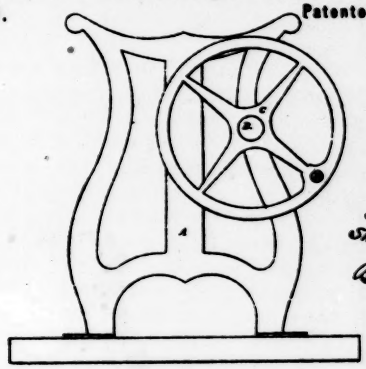
Figure 1 is a front view of a balance wheel hung on my improved journal. Fig. 2 is a side view of the same. Fig. 3 is a sectional view of the same. Fig. 4 is a side view of the journal with the follower nut thereon. Fig. 5 is a cross-section of the follower nut.

A is the frame, in which the journal is secured, (which in the case of the sewing machine mentioned would be the leg of the ma-

P. L. REESE.

Improvement in Anti-Rattling Journals for the Balance Wheels of Sewing Machines.

No. 124,160. Patented Feb. 27, 1872.



No. 955 Singer 2946 & Brill. p. 542

Fig. 1.

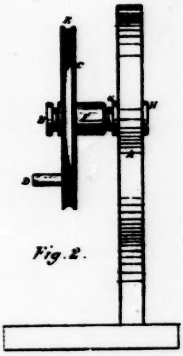


Fig. 2.

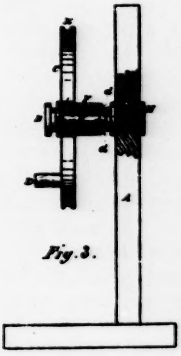


Fig. 3.

Fig. 4.

Fig. 6

Witnesses: Victor M. Cole, Wm. E. Somes.

Philip L. Reese, Inventor, by Jos. Abbott, Attorney

chine.) C is the balance wheel, having the groove E for the
55 driving belt, and the crank pin D, to which the treadle link would be attached; and K I is the journal bolt. The head B of this bolt is made with the conical bearing face *a*, and the end I has a thread cut thereon, on which is placed the follower nut G, which is made with the conical bearing face *d*, as shown in Figs. 4 and 5. The axle neck F of the wheel C is made with a cylindrical hole of a diameter slightly greater than that of the body K of the journal bolt, and the ends of this hole are reamed out to form the conical bearing faces *b* and *c* of inclinations corresponding with the conical faces of the head B and nut G; from which it is seen that when the journal bolt K is inserted in the hole in the neck F and the follower nut G is turned upon the threaded part I until brought to a bearing against said neck, the conical faces *a* and *d* of the head B and follower nut G will form the bearings for the conical faces *b* and *c* of the neck of the wheel C, as shown in Fig. 3; and the wheel C will revolve on these conical bearings, instead of turning on the cylindrical part K of the journal bolt, as in previous construction; from which it is evident that by keeping the follower nut G turned up sufficiently to "take up" any wear on the conical bearings, the wheel C will run perfectly steady and without noise or unnecessary friction, even after an extended usage. It will be also seen that this arrangement reduces the bearing to a small surface at each end of the journal, and thus diminishes the journal friction without sacrificing the steady and solid bearing of the wheel obtained in other constructions by the use of a long axle shaft, or of a journal bearing of considerable length. After the journal bolt K I is secured in the wheel C in the manner just shown, in order to secure the follower nut G against working loose from the rotation of the wheel, and to fasten the journal bolt K I in the required position, the end I is run through the frame A, and is secured at the outer end by the nut H, which clamps the frame between it and the nut G, thus securing the bolt K I in the required position, and also holding the follower nut G from working loose.

I lay no broad claim to the use of conical bearings for wheels, as conical pivot bearings of various construction have been before shown; but, confining myself to the particular construction herein described,

What I claim as new, and desire to secure by letters patent, is—

The journal bolt K I, with head B, having the conical bearing face *a*, follower nut G, with conical bearing face *d*, and clamping nut H, in combination with the wheel C, with conical bearing faces *b c*, and the frame A, said follower nut acting as a clamping nut in holding the journal bolt in position and in holding itself from
56 working loose, and the several parts being arranged and united substantially as specified.

As evidence of the foregoing witness my hand this 6th day of June, A. D. 1871. PHILIP L. REESE.

Witnesses:

THOS. C. ANDERSON.

J. M. BRENT.

Q. I now call your attention to a standard at the end of a sewing machine, together with a cone stud and band-wheel, or fly-wheel connected with it, and ask you to look at it and see whether that appears to have been worn or not. Please look at the bright part near the head of the cone.

A. That has been worn a little, not much.

Q. Can you point out where that wore uneven?

A. Yes, sir. It wears uneven on the inner part here of the hub.

Q. I ask you with reference to where it is worn on the cone part.

A. It is worn right on the edges of the cone, and it is worn by shaking it up and down. Shows that it wears on the side, as well as on the point or on the edge.

Q. Where do you see any uneven wearing in it?

A. You find just as much uneven wear in this as you would in any other wheel.

Q. Well, find it if you can in that particular wheel.

A. I will make the statement that it is impossible for any wheel that has a side jam that hangs on a stand as this does with a side pitman attached to it—I say positively that that must wear uneven. It wears in the first place because the wheel hangs over, and then the foot on the treadle pulls it over this side, giving it lateral wear. It wears on the inside of this part of the hub here, as you see it move up and down this way, and that shows wear.

Q. I show you the jam-nut which has been used in connection with this, and ask you to look at it and see if you can tell whether it has been worn or not.

A. As I stated before, it has been used some, worn a little.

Q. Which side of that jam-nut would come against the shoulder of this wheel, would you judge, from the appearance of the nut?

A. It is this side (showing).

Q. Now, do you find any uneven wear in that?

A. No, sir, not to detect.

Q. Do you find any uneven wear in this shoulder, that has rubbed against it?

A. No, sir, not that you can detect.

Q. Do you find any uneven wearing, where it has worn around a cone?

A. I cannot, which I can detect; that wheel has been abandoned because it has not given satisfaction.

Q. Please tell the jury what your authority — for making that statement.

A. How many sewing machine companies to-day——

Q. (Interrupting.) Do you know who owned that wheel?

A. I do not.

57 Q. Do you know who ever used this wheel?

A. Several machine companies tried it.

Q. Do you know who used this particular wheel?

A. No, I don't know who used that one.

(Said wheel and cone-shaped stud were here introduced in evidence, and marked Defendant's Exhibit 5.)

Mr. SCRIVNER: That is not offered as anticipation.

Mr. WHEATON: Of course it is not anticipation. This is one of the old-style wheels.

Q. Now, coming back to this question of infringement again, please point out what the arm "E" is, that your patent calls for.

A. The arm "E" is a crank.

Q. Your patent says: "C is a fly-wheel and belt-wheel combined, as seen clearly in figure 1, having on one side a projection D, at its axis, and on the other an arm E, one end of which is attached to the wheel, a little below its centre." Is that shown in the model?

A. Yes, it is in this part right here, below the centre of the wheel.

Q. Then that arm is attached to the wheel a little below the centre of the wheel, is it?

A. Yes, sir.

Q. In the defendant's is there any arm attached to the wheel below the centre of the wheel?

A. It goes clean through the centre, the crank.

Q. I say in the defendant's is there any arm attached to the wheel below the centre of the wheel?

A. No, sir.

Q. Then that feature of the patent is not in defendant's machine, is it?

A. No, that is a little different.

Q. What was the object in putting that on one end of the arm below the centre of the wheel?

A. There was not any particular object in it. It works just as well as the other. The other is a crank, and this is a crank. No particular object at all.

Q. You must have had some object when you put it that way, and described it so particularly to the Patent Office?

A. No object, except to run this wheel with the crank.

Q. Does the putting of one end of that arm "E" below the centre of the wheel amount to anything or not?

A. It does not amount to anything.

Q. Well, that is one thing described in your patent that does not amount to anything?

A. There is not anything that does not amount to anything. Everything has its place and its duty to perform.

Redirect examination:

Mr. SCRIVNER: If your honor please, in redirect examination I would like to have a drawing made there, and I will let a man I have here make it.

The COURT: All right.

58 (A delineation of figure 1 of the drawings of the Dewey patent, Defendant's Exhibit 1, was here put upon the blackboard, and afterwards referred to in connection with said patent, and the plaintiff's patent and model Exhibit 2 in the examination of witnesses.)

Mr. SCRIVNER:

Q. Mr. Brill, Mr. Wheaton closed your cross-examination with the reference to the arm "E" in your patent?

A. Yes, sir.

Q. As being attached to the wheel below the centre, while in the defendant's machine it seems to run through the centre of the machine?

A. Yes, sir.

Q. I will ask you if there is any difference in the operation of the wheel?

A. None whatever.

Q. They are both crank wheels, are they not?

A. Both crank wheels and get the same results.

Q. Do you know what the definition of a crank is?

The COURT: As applied to a wheel he means.

A. Well, the definition of a crank is a bend; it is a bend in from an axle—from a straight——

Mr. SCRIVNER: So that whether the arm of the crank attaches to the wheel below the centre or at the centre and passes through, it makes no difference in the operation?

A. None whatever.

Q. The same result is accomplished?

A. The same result is accomplished.

Q. Now, take Defendant's Exhibit 2 and look at that again. What is that?

A. It is his turning lathe.

Q. Do you find anything in that that would suggest to you or to any skilled mechanic the devices described in your patent?

A. None whatever.

Q. You find there a shaft, do you not?

A. Find a shaft with two cranks attached to it.

Q. Have you any shaft in your devices at all?

A. None whatever.

Q. How did you do away with the use of a shaft, and why?

A. Well, in order to use a crank the way I have it, I had to use a bracket "B," this bracket; because I saw it would not run across and get a support from the other leg of the machine, and when I made a shaft had nothing but a short crank, I had to get a different support than the leg here—this has the two legs for its support, has no bracket "B," and consequently I couldn't use that. I had to have the brackets here to support that end of the crank.

Q. Why did you want to get rid of the shaft altogether?

A. By getting rid of a shaft I got a centre draft for the pitman between the two centres. I got a centre draft for the pitman between the two centres, and they wore equally.

Q. Was there a saving in material?

A. Yes, sir, there was a saving in material and a saving in manufacture also.

59 Q. Was there a saying in the running lightness of the machine?

A. It also runs lighter, because you have power more central, and not distributed way off to the other end where it is not wanted.

Q. That shaft in that exhibit which you have in your hand, Defendant's Exhibit 2, rests upon the two standards or legs of the machine, do they not?

A. Yes, sir.

Q. Is there anything in that that would suggest to you the idea of removing the shaft altogether, and by a brace or standard there——

A. None whatever.

Q. You don't let me finish my question. (Continuing) doing away with the shaft?

A. Doing away with the shaft.

Q. Is there anything there that would suggest to you, or to any skilled mechanic, the idea of abandoning the shaft and using in its stead an ordinary crank?

A. Yes, sir.

Q. I mean a crank wheel. I don't mean a foreign crank.

A. None whatever.

Q. Is there any difference in the wheel shown there and the wheel used by you?

A. Yes, there is a difference in this wheel and my wheel.

Q. What is it?

A. In my wheel the crank is attached to the wheel direct, and here it — attached to the shaft, and then there are other differences.

Q. Do you find anything in that device, anything like your arm "E"?

A. Yes, sir.

Q. Explain that.

A. Those are the two cranks in the shaft.

Q. Now, is there anything that would suggest the use of your bracket "B," or its equivalent device, in any shape?

A. None whatever.

Q. I believe you find screws at the end in that?

A. Yes, sir.

Q. Both ends?

A. Yes, sir, both.

Q. Does that patent show the use of those screws in that machine?

A. It shows it in this particular combination—construction.

Q. Is there anything in that machine, as shown by the drawings there, that could be used in your combination, without alteration or change, except the screws?

A. None whatever. It would need considerable alteration in that—couldn't use that the way it is at all.

Q. I believe you told Mr. Wheaton you were familiar with what a crank wheel was, long before your patent?

A. Yes, sir.

Q. Were you also familiar with what a bracket or brace was?
A. Yes, sir.
Q. You are perfectly familiar with point centres?
A. Yes, sir.
Q. And their uses?
A. Yes, sir.
Q. And also the same question as to standard "H"?
A. Yes, sir.
60 Q. That was an old thing in all those sewing machines?
A. Yes, sir.
Q. And the braces were very old?
A The braces were very old, yes, sir.
Q. Then your invention does not consist in the making of any one of those features or elements in your machine?
A. No, sir.
Q. What is it?
A. A new combination of old matters for a new purpose, and to gain a new result.
Q. And do you get that result?
A. We get it, yes, sir.
Q. Do the defendants get it?
A. Yes, sir.
Q. I think you stated yesterday, and I understood you to say also to Mr. Wheaton, but I will ask you again, if after examining all these papers, there is any of them which accomplishes the whole of the results in a sewing machine?
A. None whatever.
Q. Look at the defendant's machine, and you have spoken about—you have already stated that the defendant used a brace—that brace was in existence when you made your invention, was it not?
A. That brace has been in existence for the last twenty-five or twenty-six years.
Q. Now, I will ask you if you did not know at the time you took out your patent, and would not any skilled mechanic know, any person familiar with the use of your invention or your wheel, that that brace, that that arm of the brace could be used in lieu of your bracket, as exactly shown in your patent?
A. Certainly. Any mechanic could know that they could use that part of a brace instead of my bracket "B." There is no invention in that whatever—merely a mechanical device that any mechanic or machinist would know.
Q. I will ask you the same question with reference to the point centers that you have been talking about, whether or not you did not know, or whether any skilled mechanic, familiar with this device and the use of them, would not necessarily know that you could reverse the points as you have described?
A. Yes, sir, every mechanic knows that.
Q. Go into that matter and explain it again. Just the operation of the point centres in your machine and in the defendant's machine. Just go over that briefly again and explain that.

A. Have you got one of my patents?

(Letters patent is here handed to the witness.)

A. In my invention the point centres are on the two screws, and the Singer wheel have reversed the point centres. They have reversed the centres and put it into the crank, so the same result is gotten, without materially changing, and the same purposes and the same results, and work substantially the same way.

61 Q. Now, you say the defendant only used one screw?

A. Yes, sir.

Q. In this case it is on the outside?

A. Yes, sir.

Q. Connected with the standard?

A. Yes, sir.

Q. Mr. Wheaton asked you yesterday if leaving this side solid here, the point centre without any screw as this is arranged, if you screwed up that, whether you might not throw it off of a line with the pitman and treadle, whether you could by the use of one screw adjust the wheel in connection with the treadle?

A. Yes, sir; you can adjust the wheel in connection with the treadle, with one screw.

Q. I want to ask you if that is of any importance in sewing machines, adjusting the wheel with the treadle?

A. None whatever.

Q. What does the word "adjustable" refer to?

A. Adjusting this wheel and keeping it without shaking and making any noise.

Q. Does it refer in any manner to the arrangement and connection with the treadle and pitman?

A. The amount of movement of this wheel, taking up the lost motion, never cuts any figure in the treadle at all.

Q. I will ask you if in the treadles of sewing machines, if there is any device there for adjusting the treadles?

A. There is.

Q. What do you adjust the treadle for, in connection with the wheel?

A. That can be adjusted in connection with the wheel, if it needs it, but it hardly ever needs it. The difference is so little one way or the other, that — is hardly worth figuring on or talking about at all.

Q. So if in fact by screwing up one screw you threw the wheel out of line with the treadle, there is a device performed in all sewing machines, after adjusting the treadle with the wheel, is there not?

A. Yes, sir.

Q. Is it done in those machines?

A. Yes, sir.

Q. What is that you hold there?

A. This is a reversed part. My centres are on two screws, and they work in two little hollow places like this—recesses for the adaptation of point centres, and the Singer Company has turned in

and put the point centre like this on the crank, merely reversing the point centre on the crank where I have point centers. One works just the same as the other and gives the same results, and there is no difference.

Q. Look at that drawing, Mr. Brill. Do you recognize that drawing?

A. Yes, sir.

Q. What is it?

A. That is the Dewey cut of this.

Q. What was the invention? Just read from the patent briefly there, so as to get it in your mind and before the jury.

62 What is the invention?

A. The invention consists of a spring, being inside of a hub on the shaft, and it was to protect the machine from running reversed—backing away—to always run forward and don't break the thread.

Q. Now, just describe the drawings on the blackboard, or from the patent or both, as you like?

A. This is two legs of the machine, and this represents forward (indicating on blackboard), and going with the crank shaft.

Q. Look at the patent and see if it describes a shaft—if it calls for a shaft anywhere. Look at the specifications.

A. Calls for a shaft in the specifications.

Q. A shaft is a necessary thing in that arrangement, is it not?

A. Couldn't get along without a shaft.

Q. Why?

A. Because this invention could not be attached to a crank; therefore had to have a shaft.

Q. Now, I will ask you if the invention described in that patent could, by any possibility, be attached to your or the defendant's crank wheel?

A. No, sir.

Q. Couldn't be put on there?

A. Couldn't be put on there.

Q. Why?

A. Because there is no room for the bossing of the hub with this spring "D."

Q. Then there is no shaft there to put it on?

A. No shaft in my wheel to put it on.

Q. Come to those hubs on the standard?

A. These two hubs here?

Q. What are those for, if you know?

A. Those are at the upper end of the stand of the sewing machine, both ends, and they seem to be set from the top down onto the sewing-machine stand, and then seem to project one-half above the hub of the sewing-machine stand, and then through that hub they have centre screws going in—centre screws and a crank shaft—crank with a shaft.

Q. Now, what is a crank shaft?

A. A crank shaft, according to Webster's definition—a shaft is a straight bar—any straight bar is a shaft.

Q. Now a crank shaft—what is that?

A. A crank shaft—you use two names, plural. The other name is the singular—alone—and when you say crank shaft you mean something more—you use the plural word—crank shaft—and it means something else than a shaft alone.

Q. Well, what is it?

A. Well, this is a crank shaft.

Q. Well, it is a shaft with a crank in it, and crook?

A. Yes, sir.

Q. Now, have you anything of that kind in your device?

A. None whatever. None in here of mine.

Q. I will ask you if there is anything in that machine or in that patent either—in the drawings or specifications—to suggest
63 to you or to any skilled mechanic, in your judgment, or one familiar with the business, and the objects to be accomplished—whether there is anything there to suggest your devices—your combination of devices?

A. None whatever.

Q. What is the date of that patent?

A. It is August 7th, 1866.

Q. Six or seven years before yours?

A. Yes, sir.

Q. Is there any bracket "B" there or anything like it?

A. There is no bracket "B" in it. There are two standards or two legs to get their support one from the other.

Q. The two standards with the shaft resting upon it are as old as sewing machines, are they not?

A. Yes, sir.

Q. I will ask you, Mr. Brill, if there is anything in that patent, or in the drawing set forth there, to suggest to you or to any skilled mechanic the use of a bracket, either as shown in your patent or as used by the defendant?

A. None whatever; and then there are other differences.

Q. Go on and describe them.

A. In this (indicating on blackboard) the wheel, ordinary wheel, is attached to the shaft; while in mine the crank is attached to the wheel, and here the wheel is attached to the shaft, another important and big difference.

Q. Now I will read the patent that we have been talking about. (Reads patent.)

Q. Look at Defendant's Exhibit 3, Mr. Brill, and state what it is.

A. This is another lathe, the same as the other was—turn lathe.

Q. I will ask you if your invention is shown in that patent.

A. No, sir.

Q. Is there any part of it shown in that patent? If so, state what it is. I will call your attention to it. Does it show any bracket "B"?

A. No, sir; no bracket "B" there.

Q. Wouldn't a bracket "B" be entirely out of place in that thing?

A. It would.

Q. Could it be used in connection with it at all?

A. It could not.

Q. Could that device be put in a sewing machine, as you or the defendant used it?

A. It could not.

Q. What does it show?

A. It shows that it is a shaft with two cranks. I have no shaft connected with the two cranks, nor with one crank, or any crank. I have nothing but a crank straight, connected with a belt wheel, and here the band wheel is attached to a shaft, besides the two cranks.

Q. Is there any difference in that wheel and your wheel?

A. Yes; there is a big difference in the wheel.

64 Q. Could that wheel be used in that sewing machine, such as yours or any sewing machine?

A. They would not make it like this. Could not use this wheel, because it has facilities for making this top part run faster or slower. That is not needed in a sewing machine. A sewing machine runs so fast, and no faster or slower, and it has not got the projection "D" that I have, where the point centres rest on. Here the point centres rest on a shaft.

Q. Now I will ask you if there is anything in that drawing or specification, Exhibit 3, that would suggest to you or to a mechanic skilled in the art the device shown in your patent.

A. None whatever.

Q. Mr. Brill, is the principle described in the patent which you hold in your hand, I believe it is, the same as the principle in the machine described in your patent?

A. None whatever.

First Exception.

Mr. WHEATON: We object to that, your honor.

The COURT (after argument): The objection is overruled.

To which said ruling of the court counsel for defendant then and there duly excepted and tendered this its bill of exceptions to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. SCRIVNER: Is there anything in there to suggest, or is there anything shown that would take the place of your bracket "B," or part of the brace used by the defendant?

A. None whatever.

Q. Did you explain this one, so far as its operation with reference to point centres, &c.?

A. I have not explained this.

Q. Well, explain that.

A. You see, there is a shaft running clean through, supported by the two legs, with two cranks in it. It has not got the bracket "B." Neither has it the crank attached to the wheel. It has got the crank

attached to the shaft. Neither has it the same kind of a wheel that we have here. It don't work the same way, on the same principle.

Q. Now, Mr. Brill, when I use that phrase "patented devices," I mean the machine that is described in your patent. You understand that, don't you?

A. Yes, sir.

Q. What is the only feature shown in that machine that has any similarity or connection with your patented devices whatever? Meaning the device described in your patent.

A. It has nothing, except point centres.

Q. You don't claim to be the inventor of point centres?

A. No, sir; they are old.

Mr. WHEATON: Does it not have bearings for those point centres?

A. Yes, sir.

65 Mr. SCRIVNER:

Q. I will ask you if bearings are not necessary features of point centres?

A. Certainly.

Q. Could have point centres without bearings?

A. You could have point centres if you did not want to put them with reference to any use.

Q. Could you have point centres, without bearings and put it to any use?

A. No, sir.

Q. Then when you say point centres with bearings, you mean it is a part of it?

A. Certainly.

Q. Is there anything else about that, that you want to explain to the jury?

A. The wheel is not like my wheel. My wheel has got those several places for the belt to run in, to make this upper shaft to run faster or slower, and then the shaft also goes through the wheel, while mine is attached to the crank, and it has not got the projection "D" for this point centre to enter into, but it has got a shaft at this end.

Q. You have been shown this patent No. 124,160, dated February 27th, 1872. What is that? What sort of a machine is described in that patent?

A. The wheel has not got a bracket "B"—has not got the point centres—has no center draft for the pitman, and is very imperfectly adjusted.

Q. Do you see anything in there like your machine, or the defendant's either?

A. None whatever.

Q. Is the principle of that machine the same as the principle of your machine?

A. No, sir.

Q. Is there anything in that patent or in the drawings connected with it, that would suggest to you or to any skilled mechanic, the

devices or mechanism shown in the machine described in your patent?

A. None, whatever.

Q. Would those drawings be of any assistance to you or to any skilled mechanic, in devising or making the combination of elements shown in your patent?

A. No, sir.

Q. Is there anything that you want to explain to the jury about that further?

A. We don't claim anything of that whatever; nothing at all. It is a different construction altogether from ours.

Q. Are you familiar with that, Defendant's Exhibit 5?

A. Yes, sir.

Q. What sort of a wheel is that?

A. Well, you would call this a hub, and that is a stud.

Q. Is it not a fact that this is similar to the old Singer wheel? Just show the jury.

A. There is a slight difference, but this runs in that V shape, and this is straight. This stud runs in a V shape; runs down to a stand; runs narrower. I can take that wheel off and show it nicer.

Q. What do you call this piece running through here?

A. This is a stud, and this is a shaft and hub, too.

66 Q. Is not this a stud, too?

A. Yes, sir.

Q. Made in a little different shape?

A. Made in a little different shape.

Q. That is, the stud in Exhibit 5 is made in a little bit different shape from the stud in Exhibit 4?

A. Yes, sir. Both the same motion, for the same purpose, and nearly the same thing. That little V shape in there don't amount to anything.

Q. They were trying to take up lost motion with that V-shaped stud?

A. Yes, sir.

Q. And you say it was a failure?

A. It was a failure.

Q. And it was abandoned?

A. Yes, sir.

Q. Is it not a fact that when your invention was introduced to the public, that all of these stud devices went out of existence?

A. Yes, sir. Well, there might be a few companies—very few—that used it—might be a small number.

Q. What was the reason they went out of use?

A. Well, my wheel came in and made a complete sweep. Swept all of this trash out of the market.

Q. Why was it changed?

A. Because my wheel was the only wheel that gave satisfaction that was ever invented.

Q. Why was that?

A. Because it run on point centres, and made it run light, and made it adjustable on cranks.

Q. I will ask you now, if in Exhibit 5 there is anything to suggest to you, or to any skilled mechanic, the devices or combination of devices shown in the machine described in your patent?

A. None whatever.

Q. Is the principle of the machine, or the mechanism shown in Exhibit 5 the same as that shown in the machine described in your patent?

A. It is impossible to be the same.

Q. Mr. Brill, fix your attention upon your second claim, which read as follows: "The combination with a driving or fly wheel and the adjustable bearings substantially as and for the purpose shown and described."

A. Yes, sir.

Q. You were asked in substance—I can't give the language exactly—whether or not these two exhibits here, Exhibits 2 and 3, did not show a fly-wheel with adjustable bearings?

A. Yes, sir.

Q. I will ask you if it shows a fly-wheel with adjustable bearings, substantially as and for the purpose shown and described in your patent?

A. Not at all.

Q. The fly-wheels described in those two exhibits last referred to, and adjustable bearings, are not such as are shown in the machine described in your patent?

A. No, sir.

Q. Now, wherein is that difference?

A. Well, it is in the combination of claims, and the construction of the patent.

Q. Those wheels and adjustable bearings are shown in those patents on the shafts, are they not?

A. On the shafts, yes, sir.

67 Q. You abandoned it or did away with the shaft and applied those elements or devices to the mechanism you have described?

A. It is adjustable on a crank wheel.

Q. The other is adjustable on a crank shaft?

A. Ours is adjustable on a crank.

Q. I will ask, as an expert witness, whether or not, in your opinion, it required or would require invention to take one of those devices or machines shown in either one of those exhibits, and with full knowledge of the existence of those things, whether or not it would require invention to make the devices described in your patent, and as covered by the second claim.

A. Most assuredly it would. This is an invention of itself. It has nothing to do with that or any of its construction whatever. It is a construction entirely of itself and original.

Q. Could, in your opinion, a skilled mechanic, familiar with this kind of mechanism, having the drawings and specifications shown in those patents before him—I mean Exhibits 2 and 3—having

those specifications and drawings before him—whether a skilled mechanic could, from them, construct your device?

A. No, he could not. This is a new invention, entirely different from those.

Recross-examination.

Mr. WHEATON:

Q. Mr. Brill, in this drawing of Dewey's patent, you have a pointed screw here and a bearing for it?

A. Yes, sir.

Q. You have a pointed screw there and a bearing for it also at the other end of the shaft?

A. Yes, sir.

Q. What does your bracket do except to furnish a bearing for one of your pointed screws?

A. My bracket furnishes a bearing for a crank, and not a crank shaft, independent of the other leg of the machine.

Q. Doesn't your bracket furnish the bearing for the pointed screw, and is it not a fact that your crank does not touch the bearing at all?

A. My point centres are in the bracket, and the point centre supports the wheel on the crank.

Q. Does your bracket perform any other service except to furnish a bearing for that pointed screw? Does your bracket perform any other service except to furnish a bearing for the screw that goes through it?

A. It performs a function for itself, for its own peculiar mechanism, the way it is constructed.

Q. What other service does it perform, except to furnish a bearing for that pointed screw?

A. It does not do anything else, except support a crank.

Q. You say it is the pointed screw that supports the crank?

A. Yes, sir.

Q. If you could support that screw without the bracket,
68 you would not need the bracket at all?

A. Couldn't do that then. Would have to have a shaft. Couldn't do that on a crank.

Q. Could this pointed screw be supported without a bearing of some kind?

A. No, sir.

Q. Now, so far as the service of supporting a pointed screw and furnishing a bearing is concerned, what is the difference between the operation of this device, this standard and this top and your bracket at the lower end of it?

A. That pointed screw furnishes a different bearing from mine.

Q. I didn't ask you that. I only asked you about the bearing of the pointed screw. Now, please confine your answer to the pointed screw alone, without regard to what it supports. Is there any difference between the office which this performs as a bearing for the

pointed screw and the office which your bracket performs as a bearing for the pointed screw?

A. There is no difference, only a difference in the construction.

Q. Then the service performed both by that standard in supporting a pointed screw is precisely the same as the service performed by your bracket in supporting a pointed screw, is it not?

A. That peculiar construction, yes, sir.

Q. Then how can you say that there is nothing in this that is like those in your patent?

A. Why, I say it again, that there is not, because there is a different construction. There is a crank shaft, and I have not any shaft whatever, and I have got a bracket "B" that this has not got. There are three distinct very heavy features that we have not got that is in this. You cannot compare the construction at all with ours.

Q. Well, let us contrast it, then. Does yours have a pointed screw and bearing for it at this side of the fly-wheel, which furnishes support for the crank?

A. Yes, sir.

Q. And here the pointed screw with the bearing for it which furnishes support for the crank—that crank shaft?

A. On this side of the wheel, yes, sir.

Q. Does this also have a pointed screw on this side of the wheel and a bearing for it?

A. That is standard "H," yes, sir.

Q. In both cases, both in your patent and in this device, are pointed screws, so made that their ends are inserted in a conical shape in the ends of the devices which carry the wheel?

A. They are both arranged so for the specific purpose in the construction of the two machines, yes, sir.

Q. In both the patent and in this device are these pointed screws adjustable?

A. Yes, sir.

Q. And yet, although in both devices there are pointed screws and bearings for the pointed screws, and in both devices there are pointed screws on each side of the fly-wheel, and in both de-
69 vices the pointed screws are adjustable, and in both devices the pointed screws support the devices which carry the fly-wheel, you still say they are not at all alike?

A. They are not at all alike.

Q. And they work on different principles?

A. They work on different principles and different mechanism, and perform different results.

Q. I wanted your opinion before the jury and they have got it.

A. They have got it and they will find it valuable, too.

Mr. Scrivner:

Q. Mr. Brill, I don't know as I fully understand Mr. Wheaton's question about the function of the bracket "B." Doesn't bracket "B," in addition to the function performed by it, also perform the

function of abandoning the use of a shaft altogether and enable you to get rid of the shaft?

A. Yes, sir.

Q. So that by the use of bracket "B" you are enabled to simply use an ordinary crank wheel?

A. By using the bracket "B" I get rid of this standard and I get rid of a shaft.

Mr. WHEATON:

Q. Could you not get rid of the shaft just as well if you took that standard and moved it up against the wheel or near the wheel?

A. It would depend on what purpose and how it was to be constructed.

Q. If you took that standard and the bearing both with the pointed screw at the socket and put it up here, would you not in that case get rid of the shaft?

A. You would have no crank there.

Q. You would still get rid of the shaft?

A. No, sir, you would not; still have the shaft there.

Q. What is to hinder moving that standard up here?

A. Nothing at all. I don't think you would find it would work. You cannot run a wheel except you have a crank.

Q. I suppose you move it up as close to this as it is, in any case, and leave room for the crank?

A. Then you have a different construction.

Q. I am speaking of the standard as compared with your bracket. Couldn't that standard be moved up here just the same as it is at the bottom of your bracket?

A. Yes, it could be done, but then the bracket would be differently connected again.

Q. Do you believe it is possible to put a bracket, connected with a wooden table with the machine, and having those screw-plates go through there in a conical form, and brace the bracket this way, and make a practical machine of it?

A. Yes, I can use that bracket in many different ways. Many mechanical devices will suggest to me how to use that bracket in many ways.

A. C. BROWN was then called as a witness on behalf of plaintiff, sworn and testified as follows:

70 Mr. SCRIVNER:

Q. Please state your full name.

A. Arthur C. Brown. I reside at 718 Vallejo street in this city. I have resided here since March 1st. About eight months. Prior to that time I resided in Sacramento; prior to that time I resided partly in this city, and I might say in New York State. I came to California about 18 months ago. I know both the plaintiff and defendant in this action. I am engaged in the sewing-machine business, have been engaged in that business about 17 years; the greater part of that time I was in eastern Pennsylvania, until within the

last four years back, and I have travelled quite extensively over the United States, Great Britian and Mexico.

Q. Are you familiar, and have you been familiar during that time, with the various styles of sewing machines in the market?

A. Yes, sir.

Q. Are you familiar with the style of sewing machines used by the defendant?

A. I am familiar with quite a number of them.

Q. How long have you been familiar with the defendant's sewing machine, and the different styles it has placed on the market?

A. I have been familiar with the defendant's sewing machines ever since I have been in the sewing-machine business.

Q. Sold by the defendant?

A. Yes, sir.

Q. I will ask you if you are a practical mechanic?

A. I consider that I am.

Q. State something of your knowledge and experience in that line. What your education has been in that direction?

A. Long before I went into the sewing-machine business I have been around where machines have been worked and doing millwrighting and mechanical drawing. In fact, I was raised among machinery.

Q. Do you think you are familiar, theoretically and practically, with mechanics?

A. Yes, sir.

Q. Have you ever examined the plaintiff's patent, the Brill patent?

A. I have.

Q. Are you familiar with the machine described in the patent, the mechanism described in the patent?

A. I think I am thoroughly familiar with the mechanism of that patent.

Q. Give us your knowledge and the history of your information about that Brill wheel or patent; how you came to know about it, and what you know about it, and the history of it, and its introduction in the market?

A. I cannot go back to the time of its introduction into the market. It only became familiar to me about seven years ago, when I first noticed it. I noticed before that time, that most of wheels on sewing machines were on a plain hub or pin, and caused a great deal
of annoyance, as that part of the machine would rattle
71 more decidedly than most any other part, and when first seen, that wheel, or that particular appliance, it struck me as being a very good thing over and above the old way. I could see at once there was a chance to take up the lost motion and stop that rattling, besides making the machine run very light and quiet.

Q. During your experience in the sewing-machine business you have been called upon to sell machines in the market to private parties?

A. I have.

Q. State what objections, if any, were made by family purchasers about those points?

A. As I said the noisiest part about the sewing machine is right there in that wheel, from the fact that there is a heavy draught on it, being the starting point of the power, and that wheel would become loose. My first experience in the sewing machines, was to tighten up these wheels that used that plain stud, and it was very hard thing to do. You could only tighten them up lengthways. There was no possible way of taking up that lost motion. When this arrangement was used, of course it was quite an advantage, overcoming all those difficulties.

Q. Were you ever in the employ of the defendant?

A. I was.

Q. When?

A. I was employed by them in the year 1887, and continued in their employ for nearly four years.

Q. Where were you in their employ?

A. I was employed in the city of Philadelphia first, from there direct at headquarters New York city until I came out here, and then I was under their employ under their office in San Francisco.

Q. You made your headquarters while in their employ at Sacramento?

A. Yes, sir.

Q. You were the manager of that office?

A. Yes, sir.

Q. While you were in their employ did you sell for them any machines as shown by Exhibits 3 and 5?

A. I did.

Q. In making those sales, were inquiries made in regard to the style of the wheel by the purchasers?

A. No, sir, there were no inquiries made as to the style of the wheel, but there is a feature there that we would call special attention to.

Q. Explain why and what was done?

A. It being a very important feature in selling a machine, we would call special attention to it, namely, the fact of the old-style wheel being rattled, and no chance to take up the lost motion. In this machine we would show where the lost motion could be taken up, and the great advantage it had as to light running, explaining the different parts of the centre draught instead of the side draught.

Q. While you were in their employ, did you sell both styles as show-, by Exhibits 3 and 5?

A. Principally Exhibit 5, because this is a later style. I do not call to mind ever selling any of Exhibit 3, although I may have done so.

72 Q. When did you say you came to California?

A. I came here in April, 1890, and I went into the employ of the defendant in March, 1887.

Q. Back as far as 1887 and along there, did you see in the market machines made like Exhibit 3, by the defendant?

A. I think I have. I will not be positive about that.

Q. You say that you have examined and are familiar with Brill's patent, and his machine?

A. Yes, sir.

Q. Now take Plaintiff's Exhibit 1 and Plaintiff's Exhibit 2 and explain the construction and mode of operation of the machine described therein?

A. In the first place I see here a wheel, a crank, hung on two point centres. That wheel shows a driving wheel for a sewing machine. This represents the leg of the machine. This represents a bracket for the support of the other end of this crank, or one end of the crank. This is intended to fasten the pitman into, operated from the treadle to give that wheel motion.

Q. Now, looking at the first claim of the patent, do you find in that model the wheel C, the arm E, or crank?

A. That is this crank or arm (indicating).

Q. Bracket B?

A. That is the support here (indicating).

Q. And the screws F and G?

A. This screw and that (indicating).

Q. How do those screws operate to take up the lost motion?

A. Each one of those screws has a point, and in the end of this crank here, there is a little socket or indenture that that point goes into, by turning that screw or screwing it in. If there is any lost motion there you will of course take it up by adjusting one of those screws.

Q. That adjusts the wheel and makes it run true and smooth?

A. Yes, sir.

Q. Now, I will ask you whether the adjustment of the wheel spoken of in this patent has reference to the adjustment of it with relation to the treadle?

A. It has not.

Q. I will ask you if it is not a fact that in all sewing machines there are means provided for adjusting the treadle with reference to the wheel?

A. Every sewing machine I ever saw, the treadle is adjustable so as to adjust it to suit the wheel.

Q. So that if the treadle gets out of plumb with the wheel you adjust the treadle to correspond with the wheel?

A. We always adjust the treadle to suit the wheel.

Q. I will ask you, as an expert, whether or not in this model of the Brill machine it would make any difference whether the recesses were in the screw or in the end of the crank here, so far as the operation is concerned, whether it would make any difference. Would not the result be the same?

73 A. It would not make any difference at all. It is only *vice versa*. It means one and the same thing.

Q. Any skillful mechanic would know, when he saw that device, that he could reverse that operation?

A. Certainly.

Q. Go to Plaintiff's Exhibit 3. Have you examined that machine?

A. Yes, sir.

Q. And are familiar with the mechanism shown there?

A. Yes.

Q. I will ask you to go through with the first claim in the same way. Point out the wheel which is designated as wheel C in the patent.

A. There is the wheel, corresponding to their wheel C (indicating).

Q. And the arm E?

A. That is this crank or arm which corresponds with this arm here.

Q. And the bracket B?

A. That is this, in the shape of a brace, which acts the purpose as the bracket B, a support for this end of the crank.

Q. While we are on that brace, I will ask you, braces are old things in sewing machines long before the date of this patent?

A. I never saw a sewing machine made without having a brace made to keep it steady.

Q. They are not all like that (pointing)?

A. No, sir.

Q. In various shapes?

A. In various shapes.

Q. But there is a brace somewhere?

A. There is always a brace.

Q. Taking that form, I will ask you if there is anything substantially different in using that brace for the purpose of the plaintiff's bracket B, whether there is anything substantially different in that thing?

A. No, sir; because it answers the same purpose. You use this brace to make a support for this end of the crank, just the same as the bracket B is used in this invention.

Q. I will ask you, as an expert, whether or not, in your opinion, a skillful mechanic, having both of those machines or models before him and knowing the existence of that brace, whether it would suggest itself to any mechanical expert, or whether any skillful mechanic would not know that he could substitute the arm of that brace in lieu of bracket B, and accomplish the same result as Brill's bracket B?

A. Of course, because there is the part coming down there which would suggest itself, to be used as bracket B is used.

Q. Turn your attention to the screws. What do you find there in Exhibit 3?

A. I find a screw, I find a lug. That is adjustable, that is to take up the lost motion there, and fastened by a set-screw.

Q. Where is the recess in that case? Is it in the lug or on the crank there?

A. In this end it is on the lug.

74 Q. The recess is on the lug and the point is on the crank?

A. The point is on the crank.

Q. How do you take up the lost motion? Explain that to the jury.

A. In order to take up the lost motion, that being the point centre, this fits into a recess. By pushing this lug along here and

tightening that set-screw, that makes it run true, without any lost motion.

Q. With reference to that lug and set-screw, I will ask you if that is not an old thing in mechanics, and whether a lug was not an old thing well known to mechanics long prior to the date of this patent?

A. I have seen that lug in use before I knew what a sewing machine was.

Q. Is there any invention involved, or anything substantially different in mode of operation, in substituting that lug for that set-screw, with its recess in place of one of the plaintiff's screws with the recess and point centre?

A. There is no difference so far as the results are attained. It is one and the same thing, only different construction.

Q. I will ask you further at the time of Brill's invention, if any skillful mechanic, in your opinion, in seeing Brill's device and the description contained in his patent, whether he would not know he could substitute that lug in the form shown in Exhibit Three, in lieu of one of those screws, and get the result of Brill's invention?

A. I should say that he could.

Q. In your opinion would he not know he could by seeing Brill's patent?

A. Yes, he would know that he could do that because it is only *vice versa* so far as the points are concerned.

Q. Is there any substantial difference in the mode of operation in that device, shown in Exhibit 3—I refer to the part attached to the brace, and the device shown in Brill's patent?

A. No, they both answer the same purpose. It is an adjustable point centre in the sense there is no difference as to the point of joining.

Q. Referring to the end of the crank attached to the brace you have an adjustable bearing?

A. We have an adjustable bearing in that lug.

Q. And it is on a point centre?

A. The lug is not on a point centre.

Q. With the end of the crank and that set-screw you can take up the lost motion of the wheel?

A. You can.

Q. Turn to the end of the crank attached to the standard, what do you find there?

A. I find a leg of the machine which this model represents, this standard H. That represents the leg of the machine. In the leg of this machine there is a cavity or indenture, and on the end of that crank is a point centre that fits into that cavity or socket. Socket would be a better word to use there.

75 Q. On that side you find no screw through the standard?

A. No screw on this side.

Q. You find there a point centre?

A. Yes, at this end of the crank.

Q. Taking that device as a whole described in the patent, do you

find a means there of adjusting the wheel and taking up the lost motion?

A. I do and the way of taking up the lost motion that is caused by wear in this combination.

Q. Now, in that arrangement, as shown in Exhibit 3, do you find such a combination of devices and mechanism as gives the defendant the following results? Does that device increase the ease of operating the sewing machine?

A. It does.

Q. Does it do it substantially the same way in your opinion as that shown in plaintiff's patent?

A. Just the same, same exactly.

Q. Does it diminish the noise of the machine when in operation?

A. The machine does not make any noise there in operation, when that is properly adjusted, which it is possible to do.

Q. By means of the device shown there, the fly-wheel will always run true when it is properly adjusted?

A. Yes, sir.

Q. I will ask you, if in your opinion as an expert, there is any substantial difference in the mode of operation between that machine, as shown by Exhibit 3, and the machine described in the plaintiff's patent?

A. Not any, same principle, same mode of operation, same points obtained, same results accomplished.

Q. Turn your attention to Exhibit 5, and show the distinction between that and Exhibit Three. Now describe the operation of that wheel, Exhibit 5.

A. This is a crank; a driving wheel with the crank attached. On one end of that crank is a point centre going into a socket in that brace. On the other end of the crank is a socket in the wheel with a screw-point centre, with a jam-nut; that is, an adjustable screw going into that socket in the wheel. That screw is adjustable so as to take up the lost motion. It answers the same purpose as it does in Exhibit Three, except it is on the other end of the crank, and a little different construction, one being a sliding lug, as on Exhibit 3, an adjustable one, and on this is a screw-point centre with a jam-nut to fasten it in position and hold it fast.

Q. Is there any difference, in your opinion, between the mode of operation between Exhibits 5 and 3?

A. No; same results obtained in both machines, only a little different form of appliance.

Q. I will go over the first claim of this patent, referring to Exhibit 5. Point out the wheel C.

(Witness indicates it.)

76 Q. The arm E?

A. That is this crank.

Q. Bracket B?

A. That is this brace which is fastened to the standard of the machine.

Q. And the screws F and G?

A. They are not here represented, but they are point centres which act the same purpose in taking up the lost motion.

Q. In regard to that rib on the outside of the wheel, when it is attached does it not become a part of the standard?

A. Yes, it is a part of the frame of the machine.

Q. Does it perform any different function in that relation than the standard itself?

A. Not a bit.

Q. Do you see any difference in the functions performed, or the results reached, by putting the screw through that arm or rib attached to the standard, and putting it through the standard itself?

A. Not a bit; it answers the same purpose.

Q. With reference to Exhibit 5, in your opinion as an expert, would not a skillful mechanic, being familiar with plaintiff's patent and device—having his specifications before him—know, as a matter of fact, that those changes, as shown by figure 5, could be made without changing the principle or mode of operation of the machine?

A. Certainly.

Q. Are you familiar with the style of hub machine sold by the defendant before they adopted this?

A. Yes, sir.

Q. Is Plaintiff's Exhibit 4 the old style of wheel?

A. Yes.

Q. Now, I will ask you if the Brill wheel is superior to the old style of hub wheel?

Mr. WHEATON: We object to that question. The patent does not cover a wheel. It does not purport to be for a wheel, by any means.

The court overruled the objection.

Second Exception.

To which said ruling of the court counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

The WITNESS:

A. Decidedly.

Mr. SCRIVNER:

Q. What in your judgment is the difference in the value, between the machine described in the plaintiff's patent and that used by the defendant prior to the patent?

Mr. WHEATON: We object to the question, on the ground that there is no machine described in the plaintiff's patent.

The COURT: The objection is overruled.

Third Exception.

77 To which said ruling of the court, counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

The WITNESS (answering): In my opinion that wheel is worth to a sewing machine, as a proportionate part of it, five dollars over and above the old style.

Mr. SCRIVNER:

Q. Look at Defendant's Exhibit 1 and state what it is.

A. It is a patent for a sewing-machine brake.

Q. Indicate upon the drawing upon the blackboard where the invention described in that patent is shown.

A. It is shown in this contrivance (indicating the brake or stop device on the shaft of the blackboard drawing of the Dewey patent).

Q. You find a fly-wheel and shaft there, do you not?

A. Yes.

Q. How does the shaft rest in the standards?

A. On point centres.

Q. Those screws run through the hubs described?

A. Yes, sir; they run through the standards, the top of the standard or hub, and into a socket in the end of that shaft.

Q. In the specifications or drawings of that patent is there any information stated or shown that would enable a skillful mechanic to construct the devices shown in the plaintiff's patent?

A. In my opinion there is not.

Q. The second claim of plaintiff's patent is for a driving or fly wheel with adjustable bearings, substantially as shown and described in the patent. If a skillful mechanic had those drawings before him as shown in Defendant's Exhibit 1, would they suggest to him the combination of a fly-wheel with adjustable bearings, such as are shown in the plaintiff's patent?

A. Not by any means, in my opinion.

Q. Would a skillful mechanic be able from the drawings shown in that patent, or from anything in the specifications, from his skill as a mechanic, to so alter and change the machine shown in those drawings, as to make the crank wheel with its adjustable bearings as shown in the patent?

A. There is not a thing there that he could use. He might use those point centres, he might use the wheel, and that is about all he could use.

Q. Seeing that fly-wheel on that shaft, and that shaft having its point centres and screws resting on the standards, is there anything there that would suggest to a skilled mechanic, to whose attention the matter had been called, how to do away with the shaft shown in Exhibit 1, and so alter and change and modify the machine, as to make the driving or fly wheel with its adjustable bearings as shown in the plaintiff's patent?

A. I do not see anything in any part of it that would suggest Brill's invention.

78 Q. Do you see anything in it that would suggest to a skillful mechanic to so alter the fly-wheel, with its shaft and adjustable bearings, as to make the combination of a driving or fly wheel of adjustable bearings substantially as shown in plaintiff's patent?

A. No, sir; I do not see that, either.

Q. You find in the drawing of that patent a fly-wheel and adjustable bearings. You also find a shaft, do you not?

A. There is a shaft there.

Q. In the device described in the plaintiff's patent there is no shaft, is there?

A. None whatever. I do not see any shaft there.

Q. Would it, in your opinion, involve invention to take that device, the machine shown in Exhibit 1, and do away with the shaft, and bring the fly-wheel, crank wheel, with adjustable bearings, together, and arrange them in a practically operating machine?

A. It could not be done. It would not be practical.

Q. When you do away with the shaft in that case you make a different machine?

A. Of course. It would not be the same thing at all. You would have to throw it pretty nearly all aside and make something new—reconstruct it—make something decidedly different altogether.

Q. So that the combination of a fly-wheel with adjustable bearings, as described in the plaintiff's patent, in your judgment is wholly different from the fly-wheel and bearings shown in that patent, is it?

A. It is a different thing altogether.

Q. Would it involve invention, in your judgment, or require an exercise of invention to take out of that machine its shaft and bring the wheel and the point centres, the adjustable devices, there together in a practically operating machine, such as is shown in plaintiff's patent?

A. It would require invention to arrange that so as to make this. It would be invention all the way through. Inventing something decidedly different and new.

Q. It is wholly a different machine?

A. Decidedly so; not the same thing at all.

Q. Look at Defendant's Exhibit 2 and state what that is, in a general way.

A. This is a lathe, it looks to me.

Q. What do you find in the drawings Exhibit 2?

A. I find the driving wheel, the shaft, two cranks, two uprights which supports the shaft, the table, and a lathe on top of that table.

Q. The machine described is a lathe, is it not?

A. Yes, sir.

Q. Is there anything in common between that machine and the machine described in the plaintiff's patent?

A. No; there is nothing there that is like that; nothing in common with it—not a thing.

Q. The shaft swings on pivot centres, I believe?

79 A. The shaft is on point centres, but they are not adjustable point centres as shown here.

Q. Why?

A. I do not see any form of adjusting them by screws set in any way.

Q. They just swing?

A. Just swing on those point centres.

Q. Is there anything shown in that patent, or the drawings there, that would suggest to any one, or any skilled mechanic, the device described in the plaintiff's patent?

A. No, sir.

Q. Could a skillful mechanic take the machine shown there and make the plaintiff's device?

A. Not from this.

Q. Look at Defendant's Exhibit 3. That is also a lathe, is it not?

A. Yes, sir.

Q. Does that have adjustable point centres?

A. This one has.

Q. Is there anything else besides that in common between that and the plaintiff's device, shown in his patent?

A. No, sir.

Q. Is there anything in that that would suggest to a skillful mechanic, or any one else, the plaintiff's described device?

A. Nothing whatever. Nothing to suggest that, that I can see.

Q. Do you know anything about this wheel (pointing to Defendant's Exhibit 5)? This is the Reese wheel.

A. That is a cone. There are two different kinds of these stud pins. It is a cone on one end.

Q. Do you know anything about those?

A. Yes, sir, I have used them. I have put them on machines.

Q. What became of them?

A. I don't know. I don't hear anything of them any more.

Q. How long has it been since they were used, so far as you know?

A. I have not heard anything of those for this last 5 or 6 years back. I was familiar with these somewhere about 1882, or along there.

Cross-examination.

By Mr. WHEATON:

Q. In referring to one of those lathe patents, Mr. Brown, you stated that there was no means of adjusting the point centres. Please explain why there was not.

A. In one that I referred to the point centres went through the standard and in the cut; it did not show any form of adjusting. It looked as though it had been put in there solid, without any allow-

ance being made for adjusting it, from the fact that they are flush with the outside of the standard. As far as shown here there is no possible way of adjusting them.

Q. If there had been any screws cut on those point centres they would have been adjustable?

A. They would.

Q. Do you consider those point centres without the screw
80 the same thing as point centres with the screws?

A. That depends altogether on the way they are applied.

Q. Suppose they are simply point centres, without any screw connected with it whatever. Is that the same thing as a point centre which may be worked backwards and forwards by a screw?

A. It does not answer the same purpose.

Q. Will it perform the same office in the adjustment of shafting or fly-wheels of sewing machines?

A. Do you mean, take a point centre that is in a position that you can move it one way or the other?

Q. Take a point centre that has no screw which will move it endways, is that the same thing, for the purpose of adjusting the fly-wheel of a sewing machine, as a point centre which has a screw attached by which it may be moved and raised?

A. It is the same thing if there is some other appliance to get the result. There are other ways of adjusting that point centre besides a screw point.

Q. I did not ask you about other ways. I am speaking about the point centre in and of itself. Is a point centre without a screw for moving it endways, the same thing as a point centre, which has a screw for moving it endways, for the purpose of adjusting it?

A. It is the same so far as the adjustment goes.

Q. In the plaintiff's devices how does he get rid of a shaft?

A. Simply by using a lug on the wheel for one end, and a crank in itself acts for the other end of the support.

Q. Does he not also attach the arm at one side of the centre of the driving wheel?

A. Yes, sir, he has attached the arm off from the centre of the driving wheel, the arm or crank.

Q. I will read from the patent, and see if this not the means by which he avoids the use of a shaft. "C is a fly-wheel and belt wheel combined, as seen clearly in figure 1, having one side projection D, at its axis, and on the other an arm E, one end of which is attached to the wheel a little below its centre, as seen in figure 2." You find the arm E attached to the fly-wheel below the centre of the fly-wheel, do you not?

A. Yes, sir.

Q. Is not that the method by which he gets rid of a shaft?

A. I don't know that he gets rid of the shaft.

Q. Does the adoption of that device in that manner, avoid the use of a shaft or not?

A. It does. That may not be just adopted in that way. It may be some other. He has got no use for a shaft there because it is a crank or an arm.

Q. In all the different sewing machines which you have seen on the market, or handled, how many different kinds have you seen in which the arm was attached to one side of the centre of the fly-wheel?

A. Just in that particular way, I don't call to mind any.

Q. I did not say just in that particular way.

A. I don't know that I ever saw any.

81 Q. You certainly have seen them?

A. Not fixed in that way.

Q. I don't say in that way.

A. Yes, sir; I have seen cranks put on wheels off from the centre.

Q. I mean in sewing machines.

A. Yes, sir.

Q. You find that in this old wheel, do you not?

A. Yes, sir, that is what I had reference to when I answered the question.

Q. In that the crank is attached directly to the fly-wheel in the form of a wrist pin, is it not?

A. Yes, sir, the crank is attached directly to that. The wheel itself forms the crank.

Q. Now, except in the case where the crank was in the form of a wrist pin, as in that old model, have you ever seen any sewing machines in which the crank was attached to the fly-wheel at one side of the centre?

A. I don't know that I have.

Q. If the arm E is held to be an arm with one end attached to the wheel a little below its centre, is that kind of an arm in the defendant's machine?

A. Not just in that form; no, sir.

Q. Is there any arm in the defendant's machine which is attached to the fly-wheel at one side of the centre?

A. There is not.

Q. If that is what is arm E, that arm E is not in the defendant's machine, is it?

A. Not in the way that you spoke of.

Q. I spoke of it just as the patent calls for it. As shown in the patent, the bracket B is attached to the top board of the machine, is it not?

A. It is.

Q. Is it not the fact that wood-work very often warps?

A. Not the way they make it on sewing machines.

Q. Suppose the top of a sewing machine gets wet accidentally, is it not as liable to warp as any other wood that gets wet?

A. Not in the way they make them. It is a solid piece of wood and cannot warp.

Q. That bracket B is a bracket which descends from the top of the machine directly down in a vertical position, is it not?

A. Yes, sir.

Q. Do you find a bracket arranged in the defendant's machine?

A. No, sir.

Q. How many screw points do you find in Exhibit 3 of the defendant's machine, this oldest one?

A. I don't find any; not in that combination.

Q. The patent says: "A screw pin passing through the standard H, as seen at F, figures 1, 2, has a pointed end which enters a corresponding socket in the projection D." Do you understand what that means and describes?

A. Yes, sir.

Q. There are two of those described in the patent, are there not?

A. Those are the screws F and G, as described.

Q. In the patent which one of the screw pins represented in that model, do you find represented by the letter F in either?

A. The one in the leg is letter F.

82 Q. Do you find another screw pin designated in the patent other than the one designated by the letter F?

A. Yes, sir.

Q. At what point do you find that place—show it in the model.

A. At this point in the end of that bracket.

Q. What letter is that designated by in the patent?

A. That is G.

Q. Are both those pin screws as shown in the patent?

A. They are screws with points.

Q. Now, please show in the defendant's machine those two screws F and G, if you can. I refer now to the defendant's old machine.

A. Those two screws in that combination are not there. Neither of those two screws is in this Exhibit 3.

Q. How many of those screws do you find in the defendant't later machine, Exhibit 5?

A. One.

Q. Do you find those two screws in either one of the defendant's machines?

A. No, sir.

Q. Have the fly-wheels of sewing machines always been used for the double purpose of a fly-wheel and a band wheel?

A. Not in all cases.

Q. Is it ordinarily the case that the different machines have used the same wheel, the fly-wheel as the band wheel?

A. Yes, sir, it is only in the older makes they did not.

Q. What is the difference between the screws used in each end of the Dewey machine, and the two screws shown in the plaintiff's patent marked with the letters F and G?

A. There is no difference at all in the screws.

Q. What difference is there in the bearings through which the screw passes, that is as bearings?

A. You want to know the difference?

Q. Yes, the difference in the bearings if there is any. Do you find any particular kind of bearings described in the patent?

A. No, sir, that is for the screws.

Q. That is what I mean, would that bearing be the same if instead of being on the upper end of a standard, it was suspended on the lower end of a bracket hung from above?

A. The support of the screw would be the same of course.

Q. What difference is there between the points of the screw and the socket which they enter in the two ends of the shaft, in the Dewey patent, and the ends of the screws and the sockets which they enter in the hub and crank of the plaintiff's patent?

A. There is no difference as far as that goes.

Q. In the Dewey patent, if there was wearing in the sockets in which those points enter so as to create lost motion and rattling, would not the screws operate just exactly the same, in taking up that lost motion and stopping the rattling, as they would operate in the construction shown in the plaintiff's patent?

A. They would take up the lost motion.

83 Q. Would they do it by exactly the same operation, that they would take it up in the plaintiff's patent?

A. They would use those screws in the same way.

Q. In one case as in the other?

A. Yes, sir.

Q. Would they operate the same in one case as in the other if you used them the same? I am talking about the points of the screws?

A. Yes, sir.

Q. Would they prevent the rattling in one case as they would in the other?

A. It depends altogether on whether this may be worn more than the other.

Q. Everything else being equal supposing the wearing is alike, they would stop the rattling in one case the same as in the other?

A. Yes, sir.

Q. What is it you call the shaft in the Dewey machine?

A. This is a shaft, reaching from that point to this; it is not a plain shaft, it is a crank shaft.

Q. That is a crank with a shaft on it?

A. Yes, sir.

Q. Is this a part of the shaft, from the point here to the wheel?

A. Yes, sir.

Q. Is it a part of the shaft that passes through the wheel?

A. Yes, sir.

Q. Is it a part of the shaft just where it comes through the wheel?

A. Yes, sir.

Q. Supposing that was taken off right there (indicating a point in the shaft at the wheel), and the crank put in right at that point, and the socket made right in the end of the crank there, would it still be a shaft?

A. It would.

Q. Why would that not be substantially the same in that case, as the arrangement shown in the plaintiff's patent?

A. Because here is a shaft, and here is a crank in the shaft, and in his patent there is no shaft whatever.

Q. Is not this hub on the outside of the wheel exactly the same as this much of the crank on the outside of that wheel?

A. No, sir.

Q. Why?

A. That is not on the outside of the wheel. It passes through the wheel.

Q. And for that reason you say that is a shaft even if the crank were here; that is, moving the crank from that up?

A. Yes, sir.

Q. Cut the rest away and put the socket right in that point, you still say that would be different from the plaintiff's patent?

A. That is already a shaft. If you cut that off you still have a shaft. You do not do away with the shaft because you shorten it.

Q. That all could be done without adding anything to what is shown in the Dewey patent?

A. No, sir; if you do that you make a different arrangement, a different thing.

84 Q. You take away a part of this?

A. Yes, sir.

Q. But you do not add anything to it?

A. If you take away a part of it and reconstruct it, you make a different thing.

Q. You do not add anything to it?

A. Not to do just what you say. No, sir.

Q. Then there is contained in the Dewey patent as now shown, that is in the shaft, and crank wheel and bearings, screw-pins and all that would be contained in it—in that case—that is, if the shaft was cut away, and the crank moved close up to the fly-wheel, and the socket put in that end of the shaft, and this bearing put up, so as to hold it in that position—everything is in it now that would be in it then?

A. No, sir, because it has got this in it now, which would not be in it then.

Q. Would there be anything in it then, when that change was made, that is not in it now?

A. No, sir.

Q. Would you in that case, after that change was made, consider it substantially the same thing as the apparatus shown in the plaintiff's patent or not?

A. Decidedly not.

Q. It would be altogether a different affair?

A. Yes, sir.

Q. And if you should find a sewing machine now, with a crank close up to the fly or band wheel, with a screw point put in a socket at the end of the crank, don't you think you would say that was substantially the same thing as the plaintiff's patent shows?

A. It is a different thing altogether, because that would be applied to a sewing machine, where this is not.

Q. Referring to your last testimony, in which, if I understood you, you testified that if the crank shaft in this Dewey patent was shortened, so that the crank was placed right next to the fly-wheel, and the other point put in at the socket in the end of the crank, you testified that would still be a crank shaft?

Mr. SCRIVNER: I object, on the ground that it is irrelevant and immaterial and improper cross-examination.

The COURT: I think the objection is good.

Mr. WHEATON: Do you undertake to say, that if this crank shaft was cut off at this point, and this crank put in at that point, and the screw point and screw made to hold it, just exactly over here, as it does in the position now shown?

The COURT: That goes within the objection.
Mr. WHEATON: The question is ruled out?
The COURT: Yes, sir.

Fourth Exception.

To which said ruling of the court, counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. WHEATON:

85 Q. I show you a wheel with a crank shaft in it, and ask you what is the difference, if any, between that crank shaft shown in the wheel which I present, and the crank shaft shown in the Dewey patent, except the difference in length?

Mr. SCRIVNER: I object. Mr. Wheaton has no right to compare any machine with anticipating machines. He must compare the anticipating machine with the plaintiff's machine, and with nothing else.
The COURT: The objection is sustained.

Fifth Exception.

To which said ruling of the court, counsel for defendant then and there excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. WHEATON: I will state in that same connection, that the crank shaft shown the witness is the crank shaft of the defendant's machine, which he has been testifying is the same thing as the patent, and different from that of the Dewey.

Q. I will ask you if this crank shaft and wheel is not exactly the same as the crank shaft and wheel used in Exhibit 3 of the defendant's machine?
A. That is the same crank wheel as used on that machine.
Q. Well, is it the same crank shaft?
A. I don't call it a crank shaft. That is not the name of it, in my opinion. It is a crank and a wheel.
Q. Where is the wheel and where is the crank?

(Witness indicates.)

Q. Well, what is the straight part between these two points?
A. A part of the crank.

Q. Why is it a part of the crank, any more than this projection here is a part of the crank in that?

Mr. SCRIVNER: I object to that. That is within the objection I made, that he has no right to compare those two things.

The COURT: The objection seems to me good and ought to be sustained.

Sixth Exception.

To which said ruling of the court, counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. WHEATON:

Q. I understand you to say that defendant's machine, in your opinion, contains the same combination of devices which are in the patent; is that correct?

A. Yes, sir.

Q. Although that machine does not have the bracket; although it does not have the arm E attached to the wheel below
86 the centre; although it does not have either one of the screws for adjusting the wheel, and although it does not have the bracket described in the patent, I understand you to say this prior machine of Dewey's did not have anything at all which is in the patent; was I correct?

A. I think not. I did not make that assertion.

Q. Did you not testify that this apparatus shown in the Dewey patent was entirely different from that shown in the plaintiff's?

A. In the combination, yes, sir. I so testify now. In the combination it is different.

Q. I am now calling your attention to a comparison between the Dewey machine and the patented apparatus, and a comparison between the defendant's machine and the patented apparatus, on comparing the Dewey machine with the defendant's. Now, on cross-examination, to make it clearer I called your attention to the patent. You have testified, if I understood you correctly, that this bracket of the patent was not in the defendant's machine; that the arm E, with one of its ends below the centre of the fly-wheel, was not in the defendant's machine; that this inside screw was not in the defendant's machine, not in either of the defendant's machines, and that this screw point F was not in the older of defendant's machines, but was in the latter?

A. That is correct.

Q. Now, when all these things are not in the defendant's machine, why is it that you can say that the defendant's machine is like that patented apparatus, and that this Dewey machine, which has a screw F and a screw G, the points, the sockets which those screws fit in, with the bearing for each one of those screws, is unlike the patented apparatus?

A. I can say that very easily from the fact that the construction of that arrangement there, the Dewey patent, is so different from the invention shown here, or in the defendant's machine.

Q. Do you find any specific form of construction pointed out in the patent, or does it name the devices generally, leaving them to be applied in their general character, such as is known among mechanics?

A. Well, I see in the plaintiff's patent, the screw-point centres. Those are used generally.

Q. Is there any particular construction pointed out for those pointed screws, or are they named just so as to be understood as the ordinary kind of pointed screws, which are in common use and well known among mechanics?

A. I don't see any reference made to being any specially different from any ordinary screw.

Q. Do you find any special construction of the bracket, or of the fly-wheel?

A. No.

87 Q. Do you find any special construction of the arm E, except that one end of it must be attached to the fly-wheel at one end of the centre?

A. That is the special construction, as it is shown there and mentioned in the specifications.

Q. With that exception do you find any special construction, pointed out in that patent, either of any of the devices, or anything else?

A. Well, the way the parts are combined is construction, that is the special feature that I see in the patent. It is not the parts that are to be used, because they are all old.

Q. So there is no special construction of any of those parts. That brings it down to a question of combination?

A. Combination of those parts.

Q. Mr. Brown, I will go through this and see if we cannot find every element of combination in that machine that is in the patented apparatus, if we substitute a section of the crank shaft in the arm "E" of the patent. Now the elements of the combination of the second claim is "a combination with a driving or fly wheel of adjustable bearings, substantially as and for the purpose shown and described." Now, in this Dewey device is there a driving or fly wheel?

A. There is.

Q. Then you find that element in the Dewey patent?

A. Yes.

Q. Do you find a pointed screw here (indicating on blackboard)?

A. Yes, the same as the pointed screw "G" in the patent, the same kind of screw.

Q. Does it perform the same service?

A. Taking up lost motion. That is what it is intended for.

Q. Are both screws capable of performing just exactly the same

office in their respective positions; that is, this screw in the Dewey patent and the screw "F" of the plaintiff's patent?

A. Yes, sir, they both perform the same service, acting as a support for the end of the crank or shaft, whatever they are applied to, as well as having adjustable quality in them.

Q. Now, does this short end of the shaft between the fly-wheel and the point of the screw correspond with the hub which is on the outside of the wheel of plaintiff's patent?

A. It does a part. It does a part there, but it is not the same thing.

Q. Does it perform the same office?

A. It holds up the end—that is, it is the support of that mechanism, the same as that is the support of that.

Q. What does this part of that shaft do, which the hub to the outside of the plaintiff's wheel does not do, or what does the hub on the outside of plaintiff's machine do, which this part of the shaft does not do?

A. Well, I don't know that there is any particular difference as to the service they do, except that one also supports that wheel by going through it. They both act as a support for the end. They are both round.

Q. Is there any difference between them as to the form or
88 office or location performed by either?

A. There is no particular difference in their form.

Q. Is this part of the shaft and also the hub on the outside of the plaintiff's wheel both of them originally attached to the fly-wheel, as shown in the two patents?

A. They are both originally attached to that support.

Q. I am speaking now about that attachment to the fly-wheel and also of the hub?

A. Yes, sir; they are both attached to the wheel.

Q. Then, so far as the combination of this screw point, bearing of the screw point, the hub outside of the wheel, and the connection with that wheel originally, is this Dewey apparatus the same as the patent?

A. Not in its general construction.

Q. I didn't say construction. I have reference now just to the one question of combination. Has this pointed screw with its bearings, the socket in the end of that hub, the hub itself and the fly-wheel combined in that Dewey patent, the same as in the plaintiff's patent or not?

A. This pointed screw goes into that socket.

Q. I want your opinion on that general question.

A. I am going to give it to you. This goes in the socket in the end of the shaft. This wheel is fastened to that shaft. That acts as a support for the end of that shaft. This also acts as a support for the end of that crank.

Q. Don't get to the crank. I have not got as far as that.

A. Well, that lug then.

Q. I have not got as far as the wheel.

A. They both perform the same object in holding that up, acting

as a working point in one as much as in the other. Of course there are two different things. I don't want to be understood to say this is the same all the way through, because I say it is not the same.

Q. You have now testified that there is no particular construction of any of the parts in the plaintiff's patent, but that the question turns upon combination. Now leaving out the difference in construction as to size or anything else, but taking the combination of this pointed screw and the bearing that it operates in, and this hub or part of the shaft that extends from the fly-wheel to the pointed screw, and the connection of that hub with the fly-wheel—leaving out the construction of any of these parts—is the combination in both actually the same or not, in your opinion as an expert?

A. No, sir; because there are different things used there.

Q. What is there used in this combination that I have mentioned, that is the fly-wheel, and the hub outside of the fly-wheel, and pointed screw, and the bearing for the pointed screw, that is not used in the plaintiff's patent?

A. Well, the wheel goes on the shaft there; it is adjustable on a shaft.

89 Q. I want to know whether the combination of those four elements—fly-wheel, hub, bearing of the pointed screw, and screw—is exactly the same combination in that as it is in the plaintiff's patent, or not?

A. You have taken as far as the wheel. From the wheel down it is the same. What I mean is, it is the same as far as the combination.

Q. The same combination?

A. The same combination from the general standard, as far as the mechanical movement is concerned.

Q. The second claim of the patent calls for the combination of a driving or fly wheel of adjustable bearings, substantially as and for the purpose shown and set forth. Now, for the purpose shown and set forth, do you know of any purpose set forth in the patent of this combination of fly-wheel, pointed screw and bearings, which is not served in that combination? That is, the taking up of the lost motion and the stopping of the rattling?

A. Well, as shown in the drawing, the purpose would be the same; that is, you take the two and put them together; the purposes are the same.

Q. Then, so far as that part of the combination goes, they are both substantially as and for the purpose shown in the patent?

A. You come to the screw-point centres, that is what you are on?

Q. I come to the combination of elements, the fly-wheel, this hub, the pointed screws and the bearings of the pointed screws?

A. I don't know as I understand your question right. Do you say it is the same, or whether it acts as a support and it is best to take up lost motion, and adjustable, just the same in one as in the other, but as to the general construction?

Q. Leave out the word "construction."

A. You used the word "construction."

Q. No, I have asked for the combination in them. You say the

combination here is the same. Mr. Scrivner has made a point on that claim "substantially as and for the purpose described." Purpose shown in the patent is to take up lost motion, eh?

A. Run easier and stopping the rattling, yes, sir.

Q. Are those purposes all accomplished in this Dewey combination and exactly the same way as they are in the patented combination, in your opinion as an expert?

A. Yes, they are the same, as far as the adjustment is concerned.

Q. The first claim calls for both adjustable bearings; that is, F and G. Now, the second bearing is found from the fly-wheel to this part. Now, have we a bearing for this end (indicating on blackboard) that is an adjustable bearing in that Dewey device, or not?

A. You have.

Q. What does that adjustable bearing consist of?

A. It consists of the screw-point centre in the socket—that
90 is, that goes in the socket to the end of that shaft which makes the point bearing.

Q. In the end of the shaft is just simply a solid piece of metal in it, as it is shown in the patent?

A. Yes, sir.

Q. Is not that adjustable bearing, calling the end of the shaft a solid piece of iron, with a socket in it, just the same as the adjustable bearing F?

A. Yes, sir.

Q. In your opinion, do these two bearings act in combination, or not?

A. You can use one or both.

Q. As they are shown there?

A. If you would use one that would be in the combination, would it not?

Q. You are the witness. Now, does this bearing on the Dewey machine act in combination with the fly-wheel and with the bearing at the other end and with this part of the shaft through the fly-wheel and that pointed screw?

A. It acts in combination or separate, two ways.

Q. As shown there, in your judgment, do they act in combination, or not?

A. That is a matter of how you want them to act—the way you apply them. You can make them act singly, separately, or in combination.

Q. In your judgment, do the two bearings shown in the plaintiff's patent, the two screws, pointed screws F and G, act in combination, or not?

A. They would act singly, separately.

Q. As shown there do they act separately?

A. No, I should say singly.

Q. Then, in your judgment, putting the two there would be merely an aggregation and not a combination?

A. It is here, the way I would have to explain that: This is supposed to remain where it is and not to be moved, because it acts for a support of that, and the adjustment would naturally be gotten

from here. You cannot screw that in there much farther; you want to keep this up here, placed up as near to the leg as possible, and in adjusting those things that is the way we adjust it, from one side.

Q. As they operate in the machine do they operate in combination, in your opinion?

A. In adjusting them?

Q. As they operate in the machine?

A. Yes, because they are both point centres and they must both operate in combination.

Q. Do these two point centres in the Dewey patent act in combination or not?

A. Of course they do.

Q. Then you have in the Dewey patent, have you not, a combination with a driving or fly wheel, of these two adjustable bearings?

A. Yes, sir.

Q. And those adjustable bearings are the same as the adjustable bearings of the patent?

A. Yes, sir.

91 Q. Then why is it they are not in that Dewey patent a combination of all the elements which are mentioned in the second claim of the patent? I am not asking what other things are in that combination, but I am inquiring why that combination of elements is not in that Dewey patent?

A. If I am allowed to explain that those elements can be found in many other things. They are all old. This combination of yours is decidedly different, in my opinion.

Q. Tell me why in the Dewey patent there is not the combination called for in the second claim, that is a combination of fly-wheel and adjustable bearings.

A. You have not got all alike there. Having got the elements there the same elements are used here as they are there, but they are not combined alike. That wheel here is not combined as this one is.

Q. What is the difference?

A. That here is a shaft, and this lug is on a wheel.

Q. Does that make any difference, in your opinion?

A. It doesn't make any difference as to the working of it, or as to the results particularly; only it is a different thing.

Q. In your judgment is this part of the crank shaft the mechanical equivalent of what is found in the plaintiff's patent or not; that is, the hub and the solid part of the wheel that would be taken up?

A. It is the mechanical equivalent, of course; shows for itself.

Q. This second claim says nothing about crank shafts, or shafts at all. It says nothing about brackets. It merely calls for the combination of fly-wheel with those adjustable bearings. Now, if those same elements in combination are not in the Dewey machine, I want you to tell me why.

A. I don't consider a shaft a lug, and of course, in my way of looking at it, it would not be the same element.

Q. When you come to the defendant's machine, which has a shaft going through the wheel, in that case do you consider the shaft the same as the lug of the patent?

A. I don't call that a shaft; I call that a crank.

Q. Don't it go through the wheel?

A. Yes, sir; it is a part of the wheel; it is fastened to the wheel.

Q. Tell me why you don't call that a shaft in that case, so far as it goes through that wheel, and do call the corresponding parts of this a shaft.

A. That is a shaft now; if you cut that down it is still a shaft. This never was a shaft; it is a crank. Cut it down and it is still a crank.

Q. From that part down is it a crank?

A. Yes, and the wheel is fastened to the crank.

Q. Is this straight part a part of the crank?

A. Yes, sir.

Q. Give us your definition of a crank.

A. A crank is a point off the centre. A crank is a point that is worked from the centre of the wheel; that is, to be worked from those centres.

92 Q. I will read you the definition of a crank, as given in Knight's Mechanical Dictionary, and see if you agree with the author or not:

"Crank. An arm (called the web) at right angles to an axis by which motion is imparted thereto or received therefrom; the crank on the axis of a grindstone or a fanning mill is a familiar instance. The crank is also a valued device in converting a rotary into a reciprocating motion or conversely. An example of the former is found in the saw-mill; of the latter, in the steam-engine. Watt is the inventor of the latter application of it.

3 (Fig. 1509) shown the single crank; 4 the double crank; 5 the bell crank.

1 (Fig. 1509) *a*, wrist or pin; *b*, shaft; *c*, web; *d*, boss.

James Watt—no mean judge—remarks that the 'true inventor of the crank rotative motion was the man, whose name, unfortunately, has not been preserved, who first contrived the common foot lathe.'

The applying to the steam-engine was merely taking a knife to cut cheese which had been made to cut bread. It was a meritorious application however, devised by Watt, to turn the reciprocating action of the piston into a rotary motion, and was stolen from him by a man who spied out the design from a sketch and conversation of Watt's workmen. Watt invented the sun-and-planet motion as a substitute (which see). See also planet wheel and epicycloidal wheel. If the foot lathe were the earliest form of lathe, which is not certain, and James Watt's idea were correct, which was quite probable, we may agree with one authority that the crank is as old as Talus, the grandson of Dædalus, about 1240 B. C., or, according to Pliny, Theodorus of Samos, about 600 B. C. It must be recollected, however, that among the oldest Egyptian paintings is the representation of Thoth forming man upon the potter's wheel.

The crank was first used with the steam-engine on board the

paddle-wheel steamboat of Jonathan Bull (English patent, December 21, 1736, No. 556). It did not revolve but reciprocated, and formed an intermediate between the rope, which was pulled by the descent of the piston, when a vacuum was created in the Newcomen atmospheric engine and the leg of the propeller, which seems to have acted somewhat like the leg of a grasshopper.

A four-throw crank was employed on each end of the axis of the wallower or lantern wheel, which was driven by the water wheel under the north arch of London bridge, as described by Beighton, 1731. This machine supplied a part."

Now I will show you the cuts which are mentioned there. (Exhibiting book to witness.)

93 A. Yes, that is a crank. There are various kinds. There are cranks there in various forms.

Q. Now, do you agree with this author's definition of a crank?

A. Yes.

Q. This definition is "an arm (called the web) at right angles to an axis by which motion is imparted thereto or received therefrom." Take this crank, and see whether you find an axis to that or not.

A. An axis—that would be the axis.

Q. Those points about which this crank arm revolves would be the axis, would it?

A. Yes, sir.

Q. If you agree with Mr. Knight as to what forms a crank, please point out in that where the arm which comes at right angles to that axis commences.

A. Commences off from the axis, may be close up and may extend. That is not a shaft. That is only fixed down there so as to fit the wheel to it, does not become a shaft.

Q. Where does the arm commence to turn at right angles to that axis? If you find that you will find the commencement of the crank of course, if you agree with Mr. Knight.

A. Well, of course the crank is here, but what other part of it is there but the crank except the axis? I cannot call it anything else. I cannot call it a shaft, because in my opinion I do not believe it is a shaft.

Q. Suppose that was extended out two feet further up the wheel on this end, would it be a shaft then or not in your opinion?

A. It would he a shaft because it would be a straight bar.

Q. Supposing then that this part was cut off, would it not be this much of a shaft?

A. It would be a shaft from the wheel out—it would be a crank shaft.

Q. Is it not a shaft where it comes through the centre of a wheel?

A. No, sir, not in my judgment.

Q. Is there any part of this that comes through the centre of the wheel at right angles with the axis, or is it in line with the axis?

A. In line with the axis.

Q. Then it would not be any part of a crank, would it?

A. Yes, it would be part of the crank. This is a part of the crank.

Q. I understood you to say that you agreed with Mr. Knight, and

he says that a crank is the arm that goes into that axis, but at right angles to it, as the crank of a grindstone.

A. Well, I don't know as I agree with him.

Q. You conclude not to agree with him?

A. I don't know as I do. If that proves that I don't agree with him, then I don't agree with him.

Q. That is the definition I have read. "A crank: An arm
94 at right angles to an axis by which motion is imparted thereto or received therefrom." Now, let us have your opinion whether Mr. Knight is correct or not.

A. I am not going to question that; I am giving my opinion as to that.

Q. I want your opinion as to whether Mr. Knight is correct or not.

A. I don't propose to question the authority of that. I cannot answer that question.

Q. If the crank then is an arm which is at right angles to the axis, which is square with it, instead of longitudinal, and which can reverse reciprocary motion into rotary or rotary into reciprocary, how can the straight part of this device which is in line with the axis be any part of a crank? I want your definition.

A. I call it a crank. I cannot call it anything else.

Q. Now, please look at the crank shown in the Dewey patent and tell us——

A. That is a crank shaft.

Q. Where does the crank commence?

A. Crank commences here on this side, and there on that side.

Q. Now, is not this part of that shaft a part of the crank just as much as the straight part of this is a part of the crank in your opinion?

A. That is a different construction altogether.

Q. Just answer the question.

A. I am answering, if I am to give my reasons for it. That crank commences out here separately all within itself.

Q. Now, from this crank to that, is that part of the shaft or not?

A. It is part of the shaft.

Q. Now, why is not the straight part of this a part of the shaft just as the Dewey is a shaft in your judgment?

A. You are only taking a section of this part here and covering it with that.

Q. That is exactly what I am doing. Now, why is one not just as much a part of a shaft as the other?

A. Because this is a crank and that is a crank shaft. That is not long enough in my opinion to become a shaft. It does not form the part of a shaft, and does not take the place and do the work for which shafts are intended.

Q. Are you not wrong about that? Here you see the shaft receives the wheel and carries it.

A. That is not why it is made so long for.

Q. Is it not part of the work it is used for?

A. Yes, sir, but that is not all.

Q. Is not that exactly the same upon this part of the defendant's, and has to run straight through it, as that does, and to support the wheel and revolve it?

A. It supports the wheel, of course.

Q. Then why don't that do the same work?

A. This is the crank and that is the shaft.

Q. Talking about this straight part of it?

A. That is what I am talking about, too.

95 Q. What is the reason that this don't do the same work as that if that carries it?

A. You have got that off the wheel. When you put it on the wheel you make a different thing of it. You are separating the two, and the two belong together.

Q. Now, you have spoken about these machines being worth $5.00 more by having Mr. Brill's wheel to it. When do you say you first knew of Mr. Brill's wheel?

A. I first saw that wheel on sewing machines back in 1884.

Q. Did the price of sewing machines go up at that time?

A. No.

Q. Didn't they rather go down of the two?

A. I think they came down before that time, the price. Sewing machines took a drop in price, I think it was a good while before that.

Q. Did you ever know of an instance where the use of Mr. Brill's wheel increased the selling price of the machines?

A. No, not that I know of. I don't know that that wheel has added to the selling price of that machine.

Q. Now, how do you reduce the selling value of Brill's wheel on a machine to a measurement that can be made in dollars and cents?

A. The value of a sewing machine—its retail value is gotten from the superior points about that as making it a salable article. That takes a very important feature in the machine, as well as some others—as I said a proportionate part. That figures $5.00 to the value of that sewing machine. Then there are attachments. There is the adjustable mechanical bearings throughout the machine. There is the high arm. There is the wood-work, there are various elements combined in that sewing machine, and makes it worth a certain sum of money. It is worth a sum of money from the fact that you get a certain price for it. I say that that particular part there, of course, in my opinion is worth $5.00 to that machine.

Q. Now, I want to know what you base that opinion on; how do you manage to measure its value in dollars and cents?

A. Well, I say that it is an estimated value. You could get the——

Q. What is the basis—what is the physical fact that forms the basis of that estimation?

A. The very fact that there is various appliances that are special features in the combination of that sewing machine. As I said a while ago, there is the wood-work, that is worth so much.

Q. What is the wood-work worth in a machine where Mr. Brill's wheel was applied?

A. The general wood-work is worth $10.

Q. Well, is that the actual price?

A. I cannot give you the actual price. I am giving you my estimation of its selling value.

Q. I am asking you whether that estimation is based on anything that the law permits to be sold or not?

A. I am only giving you my opinion.

96 Q. You say you don't know that the machine ever sold for any more on account of having that Brill attachment?

A. No, sir. That would not add to the price of the machine. It is an improvement; that is what makes them valuable.

Q. Brill's wheel is what makes them valuable of course?

A. That is one of the features. That feature is a very important feature.

Q. If you don't know of machines selling for any more on account of having that valuable attachment of Brill's wheel, do you know of any machines being sold $5.00 cheaper on account of their having it?

A. I am not figuring in that way. I am not figuring it in the wholesale part of it at all. I am figuring the retail value.

Q. The question is whether you are figuring at all, or just saying arbitrarily without any physical actual data.

A. I think I am able to judge of the value of that appliance.

Q. Do you know of any instance in which the attachment of Brill's wheel to the sewing machine has controlled the market for sewing machines?

A. Oh, no. I know this instance. I know that if it comes right down to selling that sewing machine and talking it up, that there is often delays and sale made from that very point. If that is not worth $5.00 to a sewing machine I am very much mistaken, because that is over and above the old way, a very important feature about the construction of a sewing machine.

Q. Do you know whether machines are manufactured any cheaper on account of their having Brill's wheel to it or not?

A. I don't know anything about that fact, don't know what it costs to make them.

Q. Have you any actual data by which you can measure it by a mathematical calculation, by an exact mathematical calculation, the exact value of Brill's wheel to a machine?

A. Oh, no, no, can't get at it that way.

Q. There is no actual data?

A. Not that I know of. I made my assertion that it was worth that amount of money as the proportionate part, after it was in the machine, as its selling price. Of course, I have not any statistics to show you right from figures. It is only my opinion.

Q. There is no possible way of measuring Brill's wheel—making an exact mathematical calculation in dollars and cents of its value?

A. Not that I know of, because you might deviate from the various figures that you would put in, in the various ones, because

there are so many things combined with the sewing machine. There are certain elements in every sewing machine that are worth money, and combine them together and you get the price of
97 the machine, which is the value of it, the only way that you can get at it; the only way I could get at it is, I regard them as worth $5.00, and I say so yet. The only evidence I can give you to prove that, is what I have already.

Redirect examination.

Mr. SCRIVNER:

Q. Your idea is that those machines with Brill's wheel in them sell with greater ease and greater rapidity and more readily than they would with the old devices?

Mr. WHEATON: I object to that as leading.

The COURT (after argument): Very well. Go on.

A. (After question read.) They would.

Mr. WHEATON: I object to that question, your honor, as not forming any basis for the estimation of damages.

Mr. SCRIVNER: We will discuss that later on.

The COURT: I will allow the question so as to get at what the witness means by his testimony, and the other is a matter of instruction. It is getting at the fact.

Mr. WHEATON: And since he has already testified that he has no data by which he can testify as to its value in dollars and cents, I move to strike out all his testimony in regard to the value of it.

The COURT: I will not strike it out. Your motion is overruled.

Seventh Exception.

To which said ruling of the court counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. SCRIVNER:

Q. I will ask you if you find the mechanical equivalent of the standard H in the defendant's machine—both of them?

A. Yes, sir, the equivalent is there, a substitute for it.

Q. You were asked by Mr. Wheaton to point out the screw G in Exhibit 3?

A. It is not there.

Q. I will ask you if, in your judgment, for the purposes of this machine or the mechanism described in the patent, or accomplishing the results therein referred to, whether you find in that machine the mechanical equivalent of what is called screw F?

A. Yes, I find the equivalent in this adjustable lug.

Q. Now, for the purposes described in the patent and accomplishing the results therein referred to, I will ask you if you find in Ex-

hibit 3 the mechanical equivalent of the screw G; that is, the point centre in Exhibit 3?

A. You got the equivalent to either one or both of those screws in this adjustable lug here.

Q. By having the screw centre on the other side?

A. Yes, sir.

98 Q. Does that same testimony apply to the other exhibit in regard to those screws?

A. This Exhibit 5 has a point-centre screw instead of the adjustable lug in this.

Q. Now, in the Exhibit 5 you have the exact screw as described in the patent, have you not?

A. The same kind of a screw.

Q. Now, in lieu of the other screw you have the point centre in the brace there?

A. This point centre in the socket.

Q. Look at that device there which you have gone into so minutely. You were asked if you found anything like that piece of shaft running through the wheel in the plaintiff's machine in the patented device. I will ask you what is the device on the side of the wheel in the plaintiff's patent? What do you call that in mechanics? What is it called in the patent?

A. That is a lug.

Q. I will ask you if it is not called a projection on the wheel?

A. Various names for that.

Q. What is it called in the patent? I will ask you if that is not the projection D mentioned in the patent?

A. Yes, sir.

Q. A shaft is something well known in mechanics?

A. Yes, so is a projection to any instrument; they are not the same thing in mechanics.

Q. In this instance the wheel that is in the Dewey patent—the wheel is on the shaft?

A. Yes, and in the other instance the projection is on the wheel.

Q. I will ask you if there are not various kinds of cranks?

A. There is nameless varieties and shapes of them.

Q. What is the difference between the crank here and the one shown in the patent? This is what is known in mechanics as a crank shaft?

A. Yes, sir, a crank shaft, well known in mechanics.

Q. Have you examined to see whether or not there is a specific definition of a crank shaft in the books?

A. No, I don't know that I have, but I know that it is a well-known device in mechanics, decidedly different from a crank. A crank is one thing in mechanics and a crank shaft is another thing, and a shaft is still another thing.

Q. Then there is what is known in mechanics as a crank pin?

A. Crank pin, yes, sir.

Q. Now, Mr. Wheaton called your attention to the fact that the defendant's crank ran through the centre of the wheel, while the plaintiff's crank was attached or fastened to a point below the

centre. I will ask you for the results, if there is any difference in the operation?

A. No, the results obtained are just the same.

Q. And it makes no difference in the operation of the wheel whether the crank is fastened below or runs through?

A. No.

99 G. M. GLOVER was then duly sworn as a witness on behalf of the plaintiff, and testified as follows:

Mr. SCRIVNER:

Q. Mr. Glover, what is your business?

A. My business is the sewing-machine business. I have been in that business for twenty years. I have been engaged mostly in canvassing and selling; buying and selling machines at retail.

Q. Are you familiar with the construction of the various kinds of machines?

A. I am familiar with the construction of several of the machines, yes, sir.

Q. Are you familiar with the construction of the defendant's? Do you know the parties to this suit? Do you know plaintiff?

A. I do.

Q. Do you know the defendant, The Singer Manufacturing Company?

A. I am acquainted with the company; that is, acquainted with a good many of its men. It is a corporation.

Q. Now, have you ever been employed by that company?

A. I have, and sold some of its machines. I was employed by the defendant company in 1872.

Q. And how long, running down to when? Explain to the jury.

A. Well, I was canvasser in 1872 and 1873, and then I embarked in other business for a short time, and then went back to selling different machines, and then I went back to the Singer Company in 1884, and sold machines for the company in 1884.

Q. In 1872 what sort of a wheel did they have?

A. They had a common wheel with a stud or journal. The ordinary stud wheel.

Q. As shown by Exhibit 3?

A. Yes, sir. I think that is about the style of wheel. I think that is about the wheel I sold for them.

Q. Now coming down to 1884 what wheel did you sell?

A. I sold this wheel here.

Q. Notice the difference?

A. And also this too. They had two machines at that time, they had the old-style machine, but still an improvement in the wheel, and also they had this machine.

Q. Now, was that wheel known in the market shown in Exhibit 3? By what name was it known in the market?

A. Why, it was a Brill wheel.

Q. Do you know if that wheel was extensively used along about that time?

A. Yes, sir.

Q. Was this old wheel abandoned by the defendant?

A. Yes.

Q. And the other two wheels?

A. Were in use.

Q. Exclusively by the defendant?

A. I didn't see any machines that were manufactured at that time that come out that had any other wheels on them except that. Prior to that——

100 Q. Since that, it was that style of wheel? You have seen nothing else in the market, have you at all?

A. No, sir.

Q. Now, as affects the sales of the wheel, state what you know about the use of that wheel; has it any effect upon the sale of the machines?

A. Well, it certainly does. There was one point that we wanted to show about the machines, the adjustable part of the machine, as well as the make-up of the machine, and that was always brought to people's minds, you know to see what kind of a wheel it was over the old one.

Q. Now, from your experience and knowledge of the selling of sewing machines with that wheel in the defendant's machine or in Exhibits 3 and 5, could you take an old-style Singer machine as shown in Exhibit 3, and make a sale of that wheel, do you think?

A. Make a sale of that machine?

Q. If you had both machines before you in the presence of a customer, do you think you could sell a machine with the wheel as shown in Exhibit 3 in it?

A. Not if a man had any knowledge of its mechanical construction, you could not.

Mr. WHEATON: I move to strike out everything that has been stated. The patent does not cover a wheel. The patent is a combination of a wheel with two bearings, and all this testimony is irrelevant and it is misleading.

The COURT: It is in the combination and referred to as the Brill wheel. The witnesses who have been on the stand referred to it as the Brill wheel. Go on with the testimony. The motion is overruled.

Eighth Exception.

To which said ruling of the court, counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. SCRIVNER:

Q. Now, why could you not sell a Singer sewing machine with the old original wheel in it in preference or instead of the machine with the other wheel in it?

A. Well, this has a centre draft, and while it has centre draft it has point centres, and while it has point centres it is perfectly adjustable. It runs easier, it runs lighter, and another reason, the machine is noiseless, and always can be kept that way, while this cannot. That is the difference. There are four or five different reasons.

Q. In your opinion do you think that a machine, sewing machines, the defendant's machine with what is called the Brill wheel in it is of more value than the Singer machine with what is called the hub wheel in it?

Mr. WHEATON: I want my objection to all these questions in which he questions the witness about the Brill wheel.

101 The COURT: Certainly.

Mr. WHEATON: That is understood.

The COURT: I understand your reference to the wheel is the combination——

Mr. SCRIVNER: Oh, yes, sir. I mean the devices described in the patent. Instead of using that long phrase I use the word Brill wheel as a substitute.

Ninth Exception.

To which said ruling of the court, counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

The WITNESS (answering): Why, yes, sir.

Mr. SCRIVNER: Well, now, how much greater in value do you think the machine with the Brill in it would be than with the old wheel in it?

Mr. WHEATON: We object to that question. He must first ask him if he knows.

Mr. SCRIVNER: It is damages, the same question as I put to the other witnesses. I think I have got it in about the same form.

The COURT: The objection will be overruled.

Tenth Exception.

To which said ruling of the court, counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. SCRIVNER:

Q. You have stated that it was of more value. I will ask you how much more valuable it is.

A. Well, my opinion would not be equal to some others.

Q. Well, give your opinion. That is what you are asked for.

A. I would consider that worth between three to five dollars, somewhere in that neighborhood.

Cross-examination.

Mr. WHEATON:

Q. Mr. Glover, when were you in the employ of the defendant?

A. In 1872 and 1873, part of 1872 and part of 1873, at Indianapolis, Indiana.

Q. When were you again in the defendant's employ, if at all?

A. In 1884, for about 6 or 8 months at that time. About 6 months, I suppose, I was in their employ at Indianapolis, Indiana.

Q. How long have you been in California?

A. A little over 12 months.

Q. I understand you to testify that that wheel became known as the Brill wheel?

A. Yes.

102 Q. I will ask you now if you have ever heard a single sewing-machine dealer or mechanic connected with sewing machines call either of these wheels the Brill wheel in California.

A. No.

Q. Name any of the sewing-machine dealers that call this wheel the Brill wheel in the East if you can.

A. Well, I first see that in the Sewing Machine Times or the News about the Brill wheel.

Q. Was not this the Brill treadle that you saw?

A. No, sir.

Q. That was a printed publication, was it?

A. Yes, sir, in the Sewing Machine Times or the Sewing Machine News, I could not say.

Q. Of what date, was it an advertisement?

A. It was in the Sewing Machine Times or the Sewing Machine News, I could not say which, nor could I give you the date.

Q. Was it an advertisement?

A. Well, I could not say. I suppose it was. It was brought out in the Sewing Machine Times or the News, as I say.

Q. Well, you can tell whether it was so called in the article that was written in the paper?

A. So called in an article—whether it was an advertisement or not I could not say; and I could not give you the date of the paper.

Q. Now, in that paper, did that article refer to the defendant's wheel?

A. It referred to the plaintiff's—Brill.

Q. Did it refer to either one of the wheels here in evidence?

A. It referred to the Brill wheel.

Q. I ask you if that referred to either of the wheels that are on the defendant's machine.

A. The article referred to Brill's wheel, that is what the article referred to.

Q. I understand you also to testify that these wheels of the defendant were known as the Brill wheel. Now, I will ask you if

that article made any reference to the wheels that were used by the defendant.

A. No reference about that.

Q. Then, that article did speak about the Brill wheels, but did not speak about the defendant's wheel, did it?

A. Didn't say who used the wheel in the article.

Q. Then, it was not that article that called these defendant's wheels the Brill wheel, was it?

A. How?

Q. How?

A. What do you say?

Q. I say, then, it was not that article that you read which called the defendant's wheel the Brill wheel, was it?

A. That article stated——

Q. Answer the question.

A. That is the question.

Q. How?

A. That is the answer to the question.

Q. You can tell whether that article specifically referred to the defendant's wheel or not.

A. It did not specifically refer to any wheel, only the Brill wheel.

103 Q. Now, who is it that you heard call the defendant's wheel the Brill wheel?

A. I first *I* saw it in the News or Times.

Q. First saw what?

A. The Brill wheel published in the News or Times. You asked me when I first heard of it.

Q. I am asking you now whom you have heard call the defendant's wheels or either of the defendant's wheels the Brill wheel.

A. Who?

Q. Yes.

A. Nobody here in this State.

Q. Well, did you ever hear anybody, unless it was Brill himself?

A. Brill himself—never heard any one mention it here in this State.

Q. Did you ever hear any one else anywhere call either one of those wheels used by the defendant a Brill wheel?

A. I cannot understand you exactly.

The COURT: He wants to know whether you ever knew anybody in speaking of these wheels refer to them as the Brill wheel?

A. No, sir, never referred to that particularly as the Brill wheel or speak of it in that way.

Mr. WHEATON:

Q. Then you never heard these defendant's wheels called the Brill wheel by anybody?

A. Never heard them called the Brill wheel.

Q. Never heard these wheels of the defendant called the Brill wheel, have you?

A. Nobody in this State.

Q. Well, did you ever hear anybody out of this State call——
A. Any more than through the paper or the Times, similar wheel to that.
Q. Don't you understand the question I ask you?
A. Yes, sir; I do.
Q. Then why don't you answer it?
A. I have, I thought.

The COURT: He says his only knowledge is what he read in the newspapers he referred to.
Mr. WHEATON: In his direct examination—I don't know whether he intended to or not—he said that these wheels in the defendant's — were called the Brill wheels.
Mr. SCRIVNER: No, I didn't ask him that. I didn't ask him whether the defendant's wheels were known as the Brill wheels.
Mr. WHEATON: If it is understood he did not testify to that?
Mr. SCRIVNER: I don't know as he did.
Mr. WHEATON: He testifies now that he never did hear any one call them that, and that is enough.

Q. Now, you spoke of the value of the Brill wheel. Have you any data by which you can estimate that value, or measure it in dollars and cents?
A. We cannot measure that in dollars and cents any more than you can measure any other part of that machine in dollars and cents. You might value that machine at $100.00, and I might value it at $10.00.
Q. It is a mere arbitrary estimate made in your mind, with-
104 out any actual data upon which to base it, is it not?
A. We base it on the selling quality of the machine.
Q. Have you ever known a machine to sell for any more money on account of having the Brill wheel on it, either at retail or wholesale?
A. It does not cut any figure in the price of the manufacture of the machine.
Q. Can those wheels be manufactured just as cheaply as the Brill wheel?
A. I don't know. I am not a manufacturer. I could not——
Q. Have machines ever brought any higher price to the manufacturer on account of having the Brill wheel on it, so far as you know?
A. I could not answer that. I don't know.
Q. Have any sewing machines ever sold for any higher price on account of having the Brill wheel attached to it, so far as you know?
A. I could not answer that.
Q. Do you know of any instance where the sale of a machine was lost where it did not have a Brill wheel upon it?
A. No, I could not bring any case to mind.
Q. Do you know of any instance where the sale of one machine, or the sale of more than one machine, was ever made or ever lost

on account of the machine having, or not having, the Brill wheel upon it?

A. Not that I know of. You asked that question twice. Not as I know of, I say.

EDGAR THOMPSON, called as a witness on behalf of the plaintiff, was sworn, and testified as follows:

Mr. SCRIVNER:

Q. How old are you, Mr. Thompson?

A. Thirty-five years old. I have lived in San Francisco about ten years. I am a model-maker and machinist.

Q. Do you know anything about mechanics?

A. Yes, sir.

Q. State what opportunities you have had of knowing about mechanics, practically and theoretically.

A. For twenty years I have been working as a machinist, and for the last five years been in business here, been in model-making.

Q. You consider yourself a practical mechanic, do you, and competent to testify as an expert upon mechanical devices?

A. Yes, sir.

Q. Have you examined the plaintiff's patent, the Brill patent?

A. Yes, sir.

Q. Are you familiar with the devices described therein?

A. Yes, sir.

Q. Did you make this model, Plaintiff's Exhibit 2?

A. I did.

Q. What is it?

A. That is a model of the Brill invention.

Q. Point out in that model the wheel C, the bracket B, the arm E, and the screws F and G?

A. (Witness indicates as desired.)

105 Q. In your opinion that makes a practical operating machine, does it?

A. It does.

Q. Have you examined defendant's machine, Exhibit 3?

A. Yes, sir.

Q. Point out in Exhibit 3 what you can see to be the same, or substantially the same elements or equivalents thereof.

A. The wheel C, the bracket B. (Indicating.)

Q. That is a part of the standard?

A. Yes, sir, part of the brace. The crank E and the screws, the standard——

Q. The standard H?

A. The standard H, and the screws F and G.

Q. Now, I will ask you if you understand the operations and the results obtained in this machine, as shown in Exhibit 3?

A. I do.

Q. I will ask you if, in your opinion the defendant's machine there gets the benefits and advantages called for in the plaintiff's patented device?

A. Yes, sir.

Q. Just explain to the jury briefly, the difference in the construction and form of the adjustable point centres shown in the model of the plaintiff's device, and the defendant's machine as shown in Exhibit 3.

A. In this model there are two screws, one in the bracket, and one in the standard, each having point centres, and in the crank wheel there is a depression or a hole in which the screw enters; and the same is in the crank and by moving this screw, turning it, the wear may be taken up, or, if it is loose, rattling may be prevented by it.

Q. Now, turn to the defendant's machine, Exhibit 3, and show how the same result is accomplished.

A. In this machine, there is a hole or depression made in the standard, and the end here is conical, in which the crank wheel enters. In this instance there is a lug placed here.

Q. Where do you mean?

A. On the bracket. And in there is another hole or depression made, in which the crank enters. By loosening this screw, and moving this lug backwards and forwards, the wear may be taken up and rattling prevented.

Q. You have examined this model, Exhibit 4, have you?

A. I have.

Q. You understand that construction shown there?

A. Yes, sir.

Q. In your opinion, do the devices and construction shown in model, Exhibit 3, increase the ease of operating a sewing machine, over that shown by Exhibit 4?

A. Yes, it does. In this instance as soon as it becomes worn or loose, it may be adjusted perfectly. In this, there is no way of adjusting it, except by making a new pin.

Q. Then that device shown in Exhibit 3, would also diminish*ing* the noise of operating the machine?

A. Yes, sir.

106 Q. And there is a means provided for readily adjusting the bearings, is there not?

A. There is.

Q. And the crank wheel will always run true?

A. Yes, sir.

Q. Have you examined the Dewey patent?

A. Yes, sir.

Q. You made that drawing on the board, did you not?

A. Yes.

Q. Do you consider yourself thoroughly familiar with that machine?

A. I do, yes.

Q. Just briefly tell the jury what the invention calls for, what it is, what it refers to.

A. The patent refers to a method of a driving pulley, which can only be turned in one direction.

Q. Sort of a stop device?

A. Stop device. There is nothing in there about a sewing machine except in a general way.

Q. Now, you find in that patent a fly-wheel, do you not?

A. I do.

Q. And you find adjustable bearings, do you not?

A. I do.

Q. Is there anything else in common between that and the plaintiff's patented device?

A. No.

Q. You have studied that patent carefully, have you?

A. Yes, sir.

Q. Do you find in that patent, or in the drawings attached to it, anything that would suggest the Brill patent device?

A. I do not.

Q. In your opinion could that machine or the devices shown in the Dewey patent be so altered and changed and modified as to take the place, or to be applied to the uses shown in the Brill patent, without invention?

A. It could not.

Q. Do you find in those specifications and drawings of the Dewey patent, such information, stated in such full, clear and precise form as to enable any person skilled in the art to which it relates to, from those descriptions and drawings, construct the devices described in the Brill patent?

A. I don't. To do so I would have to change this and add those parts to it, which makes the Brill patent, and if you had handed me this drawing I would not have been able to make this model.

Q. You received that Brill patent from the plaintiff in this case with instructions to make this model?

A. Yes, sir.

Q. Now, if he had brought, in lieu of his patent, if he had brought the Dewey patent, could you have constructed that model?

A. No, sir.

Q. Could any skilled mechanic have done so in your opinion?

A. No, sir.

Q. Do you find anything in the patent or in the drawings that would suggest or enable any person skilled in the art, to combine together a fly-wheel with adjustable bearings substantially as shown in the Brill patent?

A. No.

Q. Is there anything there to suggest that kind of a com-
107 bination to any skilled mechanic in the art?

A. There is not.

Cross-examination.

Mr. WHEATON:

Q. Mr. Thompson, I understand you to say that there is nothing in common between this Dewey patent and plaintiff's apparatus, except this fly-wheel and these parts at each end of the shaft—is that true?

A. Yes.

Q. In your judgment is it a fact that the fly-wheel and the bearing at each end of the shaft in the Dewey machine are in common with the fly-wheel and the bearings in plaintiff's apparatus?

A. They are.

Q. In the Dewey patent the statement is: "F represents the fly-wheel of the ordinary crank-treadle motion to which the invention is attached, as shown at Figs. 1 and 2," and the plaintiff's patent simply says a driving or fly wheel with adjustable bearings, and something combined, without giving any particular description of it. These belt wheels and fly-wheels were the usual kind used in sewing machines, were they not, as shown in this old device—is that a fact or not?

A. This fly-wheel as to the groove.

Q. The question is: The ordinary wheels used in sewing machines were a combined fly and belt wheel, were they not?

A. Yes, sir; but they are not in this instance.

Q. How can you say that when the statement is, the fly-wheel of the ordinary crank-treadle motion?

A. This is not an ordinary crank-treadle motion. This is different. The groove pulley is separated from the fly-wheel.

Q. Then you undertake to say that this is not the same thing as described in the patent of Mr. Dewey?

A. This is the fly-wheel.

Q. It says the fly-wheel of the ordinary crank-treadle-motion sewing machine. You undertake to say that is not the same thing?

A. No, that is different. This is a different invention altogether.

Q. We all understand that. That is not used by the plaintiff or the defendant. We understand that. I repeat the question I asked you a while ago: Do you find that these fly-wheels, with these bearings at each end there, are common to the Dewey patent and to the plaintiff's apparatus or not?

A. I find no bearings at the end here. I find a fly-wheel which is different in this respect that there is no groove pulley on it, and the groove pulley comes here, and that constitutes the patent.

Q. Do you find a fly-wheel in the plaintiff's apparatus?

A. Yes.

Q. C is a fly-wheel. You find a fly-wheel there, do you?

A. Yes, sir.

Q. Well, call that a fly-wheel. Do you find a fly-wheel in
108 those two bearings at the end common to the Dewey patent and to the plaintiff's apparatus or not?

A. I do not find them common to both.

Q. You do not find those same things in both apparatus, do you?

A. No.

Q. Don't find a fly-wheel in both?

A. I find a fly-wheel in this construction.

Q. Do you find a fly-wheel in both leave out the construction?

A. I find a fly-wheel in both.

Q. Then you find a fly-wheel common to both?

A. Yes, with the difference that I have stated.

Q. Never mind the difference. Please make a direct answer.

A. A fly-wheel in both.

Q. A fly-wheel in both machines, is there?

A. Yes, sir.

Q. Do you find these two pointed screw bearings in both machines?

A. Yes, sir.

Q. Then, are both of these pointed screw bearings common to the Dewey patent and to the plaintiff's or not?

A. Yes.

Q. Well, then, as a matter of fact the fly-wheel and those two pointed screw bearings are common to both the Dewey patent and to the plaintiff's apparatus, are they not?

A. The fly-wheel?

Q. I say the fly-wheel and these two bearings at each end?

A. Yes, sir.

Q. They are all common?

A. Yes.

Q. The second claim is for "A combination with a driving or fly wheel of adjustable bearings, substantially as and for the purposes shown and described." Are these pointed screw bearings used for the same, or, at least, do they perform in the Dewey patent the same office precisely that they perform in the plaintiff's apparatus; that is, do they take up—can they be used for adjusting the part that carries the fly-wheel—can they be used for taking up lost motion and for preventing the rattling and noise of the machine?

A. Yes.

Q. Then are those two screw bearings, pointed screw bearings, used for substantially the same purpose in the Dewey machine that they are used for in the plaintiff's?

A. Yes, sir; the screw bearings.

Q. For substantially the same purpose?

A. Yes.

Q. Now, is not the fly-wheel used for the same purpose in the plaintiff's machine as it is used for in the Dewey apparatus?

A. No, sir.

Q. That is for a heavy wheel which carries momentum enough to make the needle running and taking stitches without holding on when each stitch is taken?

A. No, sir; this is different in this way; the fly-wheel in here carries the crank.

Q. I am talking about the fly-wheel alone. What use is
109 the fly-wheel put to in the plaintiff's apparatus which it is not put to in the Dewey patent, or what use is the fly-wheel put to in the Dewey patent which it is not put to in the plaintiff's patent?

A. In this instance the fly-wheel has a groove here for to take the cord. In this instance there is no groove on it of——

Q. I am asking you about the plaintiff's apparatus without the cord.

A. That is the use. In this instance the fly-wheel is made for two purposes, for carrying the cord and to give momentum, and in this instance it is just used for giving momentum, and is different.

Q. The claim speaks of a driving or fly wheel. The claim will cover a fly-wheel which is not a driving wheel. Now, treating it, that of a fly-wheel alone, tell what that does as a fly-wheel, leaving off its duty as a driving wheel, that that does not do as a fly-wheel.

A. Well, as a driving and fly wheel. This, I think, drives the cord, and this just causes momentum.

Q. Does that drive the cord as a fly-wheel, or does it drive as a driving wheel?

A. As a fly-wheel or driving wheel; there is a combination of both—it is both a driving wheel and fly-wheel.

Q. Is there a fly-wheel which is not a driving wheel described in this patent of plaintiff?

A. No.

Q. Then, when the claim calls for a driving wheel or fly-wheel, in calling for a fly-wheel it calls for something that is not described in the patent at all, does it?

A. It calls for a driving and fly wheel.

Q. I am reading from the patent, so I am getting that right; so in calling for a fly-wheel, which is not a driving wheel, it calls for something which is not in the patent?

A. This is a driving and fly wheel.

Q. Oh, yes, we understand that.

A. That is described in the drawings.

Q. As a wheel it is used for the belt?

A. Yes.

Q. Now, as a fly-wheel, what is it used for?

A. To carry the crank over the centre.

Q. In that Dewey fly-wheel, what is that used for except to carry the crank over the centre?

A. No other purpose.

Q. Then, for the purposes of a fly-wheel, is the fly-wheel in the plaintiff's apparatus used for the same purpose as the fly-wheel of the Dewey patent; that is, to carry the crank over the centre?

A. Yes.

Q. Then, if you find the fly-wheel common to both, and those adjustable bearings common to both, and those adjustable bearings and fly-wheels are used for the same purpose in both machines, what else could there be common to both machines that is described in the second claim, leaving out the driving wheel; that is, a combination of a fly-wheel of adjustable bearings substantially as and for the purpose described?

110 A. I don't find this is substantially described in this patent.

Q. You have already testified that they act alike, operate alike, and do the same thing in both.

A. But I find this is different, all the same. In this it is attached to the shaft——

Q. I have not asked you one word about the shaft. I have confined your examination to this claim that calls for a fly-wheel and adjustable bearings.

A. You asked me what I found in those two, and I read the second claim. I find this is different. This has a shaft and this has no shaft.

Q. The claim says nothing about a shaft and says nothing about a crank.

A. It says: "Substantially as described" in the patent.

Q. And I have gone through with that "substantially as described," and the saying they are both for the purpose and act substantially alike; that is, the bearings in the Dewey patent and the fly-wheel, and have you not so testified everybody in the court-room would know it was so. Now, in the plaintiff's patent he has got an arm E, has he not?

A. Yes, sir.

Q. Which acts as a crank?

A. Yes.

Q. But in the second claim I am talking about there is not a word about that arm E?

A. No.

Q. There is nothing in it except simply the driving or fly wheel and adjustable bearings, is there?

A. "Substantially as described." Yes, that refers to those.

Q. Now when I speak of a combination of this fly-wheel in the plaintiff's model with the adjustable bearings of it by these pointed screws, do you understand what that combination means, what a combination of those devices is?

A. Yes, sir; you mean the fly-wheel with the adjustable bearings.

Q. Yes.

A. Without anything else?

Q. Without anything else. Do you understand what that combination means?

A. No.

Q. As a mechanic you would not know what that combination was?

A. Unless I had some previous description of it.

Q. Understanding the plaintiff's entire apparatus as you do, do you find in the plaintiff's apparatus a combination of a fly-wheel and two adjustable bearings or not?

A. Yes, I find adjustable bearings there of a fly-wheel.

Q. Do you find a combination—that is, adjustable bearings and fly-wheel acting in combination with each other?

A. Yes.

Q. Now, in the Dewey machine do you find a fly-wheel and adjustable bearings acting in combination with each other?

A. Yes, I find adjustable bearings and a fly-wheel.

Q. You also find in the plaintiff's apparatus those devices, some that forms a crank and some that forms bearings to hold the adjustable screws, do you not?

A. In this model?

111 Q. Yes. In the plaintiff's apparatus.

A. Yes.

Q. And in the Dewey machine you find still a different kind of apparatus, but which has a crank, a crank shaft, and also devices for lifting up combination screws at each end, do you not?

A. Yes, in this instance I find a crank and crank shaft and pointed screws.

Q. But so far as leaving out all the intermediate devices in both apparatuses, that is, in the Dewey patent and also in the plaintiff's apparatus, except the fly-wheel and these adjustable bearings, do you find the combinations of fly-wheel and adjustable bearings as elements just taken by themselves to be the same in both this Dewey machine and the plaintiff's apparatus?

A. Yes, sir, if this is cut out, if the shaft is cut away.

Q. That is, that leaving out all the intermediate devices, leaving out the shaft and the crank in this case, and leaving out plaintiff's apparatus, the arm E, bracket and the standard, and also leaving out the standard in the Dewey machine, but just taking those three devices by themselves; that is, the fly-wheel and the adjustable bearings, you find the combination the same in the Dewey machine that it is in the plaintiff's apparatus, do you not?

A. I have to do away with part of it, because there is more in here than there is in there.

Q. If you find the combination of these three elements, that is, the fly-wheel and adjustable bearings, to be in the Dewey machines the same as in the plaintiff's apparatus, how can you say that there is nothing in the Dewey machine which would suggest the same combination in the plaintiff's apparatus?

A. Because this is attached to the shaft and there is no shaft here (indicating). That is where the difference is.

Q. That is why you say so, is it?

A. Yes, sir.

Q. Now, suppose that a mechanic had made the plaintiff's apparatus without the adjustable bearings at each end, but everything else was the same; suppose that he had found it were creating lost motion and a disagreeble noise; suppose that he did not know how to fix it and should see the Dewey machine in which these adjustable bearings were used, and should see that those bearings would take up lost motion and stop the disagreeable noise—take up the lost motion that was caused by the wear and would adjust everything true—if that was a skilled mechanic, understanding his business, would he not know from seeing these adjustable bearings in the Dewey machine that he could apply those same adjustable bearings in that connection to the plaintiff's apparatus, and so take up that lost motion and adjust the fly-wheel and prevent a noise?

A. Yes, because the pointed centres are old devices.

112 Q. Then he would know from seeing the Dewey machine, if he had not seen it before? If he had not seen those operated he would know that he could transfer the same adjustable bearings in this apparatus and so take up the lost motion and prevent the noise?

A. If he saw one of his.

Q. If he saw the plaintiff's apparatus constructed every way excepting that it had some old fancy bearings or stud there which did not take up the lost motion, and which, when worn, would make a rattling noise?

A. Yes, sir.

Q. Any skilled mechanic would know, by virtue of his business, that he could make the same kind of adjustable bearings as there in the Dewey machine?

A. Yes, sir.

Q. And if he did not know of them in any other way, but saw them in the Dewey machine, he would know from his business as a mechanic that he could make the same kind of appliance as in this apparatus, and so take up the lost motion to prevent the noise?

A. Yes, sir.

Q. What is the difference between the arm E, which you find in the plaintiff's patent, and this crank shaft, so far as holding this end of this side of the wheel is concerned?

A. In this instance this crank is attached to the wheel and this instance there is a shaft there.

Q. My question was confined to this apparatus from the fly-wheel to the left hand of the Dewey machine, where there is no crank. I say, what is the difference between the application of devices; that is, the crank shaft from the fly-wheel to the adjustable bearings, and the adjustable bearings, and all acting together in combination? What is the difference between them and the Dewey machine, and the hub, and the outside of the plaintiff's fly-wheel, and the adjustable bearings which he uses?

A. In this instance the shaft is put through; that is the shaft; that represents a shaft, supposed to be.

Q. What is it in the plaintiff's case?

A. This is a hub.

Q. In both cases is the shaft and hub attached originally to the fly-wheel?

A. Yes, sir.

Q. Now, what is the difference in the action between the hub of the plaintiff's wheel and this part of the crank shaft of the Dewey machine?

A. No difference. I don't see any difference.

Q. Their action is the same?

A. Their action is the same.

Q. And for all practical purposes one is precisely the same thing as the other, are they not?

A. Yes, sir.

Q. Then is the combination for all practical purposes—well, I will go a little further. Is this end of the crank shaft through to the right-hand side of the wheel an exact equivalent for the hub on the plaintiff's wheel and the solid metal which falls in the line of the crank shaft through the wheel, until it gets to the face of the wheel on the other side?

A. Yes, sir, I should say so.

113 Q. Does the converse rule hold good that the hub on the plaintiff's wheel and the solid metal which is in the middle of the wheel, until you get to the side of the wheel, the mechanical equivalent of the face of the shaft, until you get to this end?

A. I should say so.

Q. Practically the same thing, only called by different names. Then so far as the shaft, the fly-wheel, the use of this part of the crank-shaft, the combination of this socket with the pointed screw and the shaft, the pointed screw with a bearing into the standard, is it not precisely the same thing in plaintiff's apparatus, as it is in the Dewey machine?

A. Yes, sir.

Q. In that respect the plaintiff's apparatus is a mere copy of the Dewey machine, is it not?

A. Not necessarily.

Q. Whether necessary or not, is it not the fact that it is so?

A. It is the same—answers the same purpose.

Q. For all practical purposes, it is exactly the same as a copy of the Dewey machine from the front of the machine, from the back of the fly-wheel to this screw, including the pointed screw and the bearing for the pointed screw also, is it not?

A. Yes, sir.

Q. The same thing. Now, in your judgment, is the arm E shown in the plaintiff's patent with the one end—I will read the description: "C is a fly-wheel and belt wheel combined, as seen clearly in figure 1, having on one side a projection D at its axis, and on the other an arm E, one end of which is attached to the wheel a little below its center, as shown in figure 2." Do you understand that description of the arm E?

A. Yes, sir.

Q. That arm E is used as a crank, is it not?

A. Yes, sir.

Q. And nothing else? Now, is there any difference in the operation of that arm E and this crank in the Dewey patent?

A. Yes, sir. This crank is made to drive a shaft and the shaft the fly-wheel. In this there is no shaft. The shaft is done away with.

Q. I do not ask you about the shaft?

A. You asked if the operation was the same.

Q. Yes. Is not the operation of the crank in the Dewey machine precisely the same as the operation of the crank in the plaintiff's patent?

A. No. This crank drives the shaft.

Q. Don't both cranks operate the same after all? One for driving the wheel and the other for driving the shaft and wheel?

A. Yes, sir.

Q. I am after the action of the crank by itself without regard to what it drives, but how it operates in doing its driving—is there any difference between the two or not?

A. I consider there is a difference.

Q. Consider there is?

A. Yes, sir.

114 Q. Do you consider the arm E the exact equivalent of this crank so far as its use as a crank for driving that treadle and the driving whatever machinery there may be for it to drive?

A. It is equivalent for threading. To connect with the thread.

Q. Turning now to defendant's apparatus, Exhibit 3, do you find the standard at the end substantially the same in the defendant's apparatus as it is in the plaintiff's?

A. Yes.

Q. And that is just simply the same old standard that was used in the old machine, prior to that time?

A. Yes.

Q. There is nothing new in that standard?

A. No.

Q. Do you find in that machine the arm E, one end of which is attached to the fly-wheel?

A. In defendant's machine?

Q. Yes.

A. There is arm E.

Q. Is one end of that attached to the fly-wheel at one side of the centre?

A. No, it is attached to the centre.

Q. The description in the patent is this: "An arm E, one end of which is attached to the wheel a little below its centre." Do you find such an arm as that attached in that way in defendant's wheel?

A. No, but I find the crank here.

Q. Without regard to what other things you find there, do you find an arm E, having one end attached to the wheel, a little below its centre?

A. No, sir, I find an equivalent attached to it.

Q. Do you consider the attaching of that arm E at one side of the centre of the wheel of any utility or not?

A. Yes, sir.

Q. Of what utility is the attaching of that arm to one side, or a little below the centre of the wheel? What advantage is there in that?

A. The object is to drive the wheel.

Q. What advantage is there in having the arm connect with the fly-wheel, a little below the centre of the fly-wheel, instead of using a crank which connects at the centre, as shown in the defendant's machine?

A. There is no difference between the two.

Q. Then there is no advantage in the world in connecting that arm E with the fly-wheel a little below its centre, is there, instead of connecting it at the middle?

A. Not actually.

Q. It is not a fact, however, having the arm E connected with the side wheel a little below its centre, that the treadle can be worked close up to the fly-wheel, and so save the distance which is taken up

by one arm of the defendant's crank; that is, the arm between the top of the treadle and the fly-wheel?

A. Not in all cases. I could make a crank that is attached to the centre, and close up to the fly-wheel.

Q. Is it a fact or not, that by connecting the arm E with the fly-wheel, a little below the centre of the fly-wheel, that the
115 top of the treadle may be worked close up to the fly-wheel?

A. No, sir.

Q. Why not?

A. Because as I described I can sink that into the wheel here and get the same space.

Q. How does that prevent you working the treadle on the arm E, close up to the fly-wheel?

A. It does not prevent you working it close up.

Q. My question is, if the arm E is put in, as shown in the plaintiff's model, cannot you work the top of the treadle close up to the fly-wheel?

A. Yes, sir.

Q. Now, as the defendant has made its arm in practice, can you work the treadle close up to the fly-wheel, or do you have to leave it off an inch or so?

A. In this instance it is left off an inch or so.

Q. Then there is some lost room between the fly-wheel and the pitman of the treadle by using a crank, as the defendants have used it, instead of using the arm E as described in the patent?

A. I do not see there is any loss, because the pitman ought to be about the centre between the two pivots. I would not consider that was any loss.

Q. There is a difference in the distance, is there not?

A. It depends on the length of this arm. I might put the pitman right here or put it there (indicating).

Q. That arm E seems to be smooth all the way across, intending for the pitman to be run the whole distance over it?

A. It does not. There is a shoulder on it here. I could place that anywhere to get the pitman here.

Q. See if you see any shoulder on the arm E in the patent?

A. No, I do not think it claims to be.

Q. So far as that shoulder put on the model, it is different from the patent?

A. No, sir.

Q. Point out the shoulder in the patent.

A. It does not show any.

Q. What is the reason that that shoulder put on the model is not different from that put on the patent, if there is a shoulder on the model and not one in the patent?

A. This is a model to show the principle of the invention.

Q. I understand what that is perfectly well. You are making a point on that shoulder. I now ask you, if that model is not made different from the patent, in so far as there is a shoulder put in the model, while there is no shoulder shown in the patent?

A. I would not consider that a difference. In the same way this wheel is not cut up, as the wheel is ribbed in the patent.

Q. In that one respect, of the model having a shoulder, and the patent not showing it, you say there is no difference between the patent and the model?

116 A. No, sir; I simply point to this shoulder to show that the pitman may be placed anywhere you choose, some distance from the fly-wheel if you choose. It would not do to have the pitman running up against the fly-wheel.

Q. How is the bracket B hung, as shown in the patent?

A. In the patent it is shown attached to the table.

Q. Are those tables usually of wood?

A. I believe so.

Q. Were they always made of wood, so far as you know?

A. Yes, sir, so far as I know.

Q. Do you consider a bracket suspended from a wooden table in that way to be as strong and substantial as a bracket fixed in the iron-work of the machine?

A. Yes, sir.

Q. Would this bracket, whether made of metal or wood, be as strong and substantial as these braces which are in the iron-work of the machine?

A. It might be made sufficiently strong enough to do the work.

Q. Is this brace which is used by the defendants to sustain one of the bearings, an iron brace?

A. Yes, sir.

Q. Is it connected both above the wheel and below the wheel, with the iron head which holds the other bearing?

A. In this instance it is. It is connected with the standard.

Q. Cannot you make it with much less metal, if you place both bearings within such a frame as is formed by the joining of these two ends of the metal brace to the two ends of the vertical standard?

Mr. Scrivner: I object to that question.

The Court: I sustain the objection.

Tenth Exception.

To which said ruling of the court counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Q. Do you find that bracket B as described in the plaintiff's patent, in the defendant's machine?

A. I find the equivalent.

Q. That is not the question. Do you find that bracket B, as described in the plaintiff's patent, in the defendant's machine?

A. It is not the same shape certainly. It is curved there, that is all; otherwise I find this brace.

Q. Why do you not answer these questions direct when they are easily answered by yes or no? I ask you again, do you find the

bracket suspended from the table top as described in the patent, in the defendant's machine?

A. No, sir.

Q. Do you understand the screw F mentioned in the patent?

A. Yes, sir.

Q. You understand that?

A. Yes, sir.

117 Q. Do you find that screw F in Exhibit 3 of the defendant?

A. No, sir, but I find the equivalent of it.

Q. Why do you interject that you find the equivalent of it? Are you interested to have the plaintiff win this case? Why, after you have answered the question directly, or in other cases you refuse to answer it directly, do you make that addition? What is your reason for doing so?

A. I answered that question directly. I said I found no screw, but I said I found an equivalent.

Q. Why did you make that addition? What was your object in doing it?

A. Because there is an equivalent.

Q. What was it your concern to tell us of it? Suppose it is so. What motive induced you to tell of it?

A. Because I see it there.

Q. You did not understand that that was what I asked you?

A. You asked me if there was a screw.

Q. Yes, sir.

A. I say no, but there is an equivalent of it.

Q. What do you understand by the word "equivalent"?

A. Something that performs the same function.

Q. What function does that screw F perform?

A. To hold up the wheel.

Q. Is that all?

A. It may be made to perform other functions, because it would depend upon the length of this screw. If that screw that is in the shoulder would hold up the wheel, if I have a longer screw I can adjust it.

Q. Does not the turning of that screw move its point backwards and forwards?

A. Yes, sir, if the screw is long enough. If I have screwed that screw up to the edge, it does not.

Q. The patent states: "The object of my invention is to increase the ease of operating the machine, diminish the noise, and provide a means of readily adjusting the bearings of the driving or fly wheel." Do you know of any way of adjusting those bearings, except to adjust those screws F and G?

A. Yes, sir, by adjusting it with one screw G.

Q. Is one of those screws perfectly useless?

A. No, sir, the other screw is for the purpose of holding up the wheel.

Q. In turning those screws, does it not carry the bearing point

of the screws, where they come in the sockets, backwards and forwards?

A. Yes, sir.

Q. Can you turn those screws without their moving the points backwards or forwards?

A. No, sir, if there is room left for the screw to turn; if the screws are long enough, then I can adjust them, but if one is screwed up against the shoulder you cannot.

Q. Why do you keep putting in, if the screws are so short they cannot be used?

A. In that instance, they are used for the purpose of holding up the wheel.

Q. Then it will be merely a bearing?

A. Yes, sir.

118 Q. The screw part of the bearing you could not use, could you?

A. The screws would be put in just for the purpose of getting that cone.

Q. I am talking about using the screw itself as a screw. It may be so short that you could bring each bearing down, the more you can barely use the screw?

A. No, sir.

Q. Then the screw part would be killed?

A. I don't understand.

Q. In that case, it would not be practically used as a screw for adjustment?

A. No, sir.

Q. The patent calls for two screws?

A. Yes, sir.

Q. And for adjusting, and those other means that it has for adjusting, and no other. By the use of the plaintiff's two screws in case of a wearing in both sockets, or the wearing of the point of both screws, can you by turning both of them up, take up the lost motion and stop the rattling, and still leave the fly-wheel in exactly the same position that it was before, over the treadle and over the top?

A. Yes, sir, that might be performed.

Q. If you have only one screw, and use a point at the other end as shown in the defendant's shaft, if you adjusted at one end, entirely, for taking up the lost motion, will it not move the fly-wheel one way or the other?

A. Yes, sir, it would.

Q. Then for the purpose of taking up the lost motion without moving the fly-wheel in either direction, do you find the equivalent of the two screws in the defendant's machine; that is Exhibit 3?

A. For the purpose of adjusting the fly-wheel?

Q. For the purpose of taking up the lost motion, without moving the fly-wheel in either direction.

A. No, sir, but I find the means of taking up the lost motion from one side.

Q. If the object is to take up the lost motion, so as not to move

the fly-wheel in either direction sideways, you do not find the equivalent of those screws in the defendant's machine, do you?

A. No, sir, not for the purpose of adjusting it sideways.

Q. Now, the screw part of those pointed screws is the part that moves endways, by which you are enabled to adjust the fly-wheel, without moving it sideways, is it not?

A. I do not quite understand.

Q. The points bear in the sockets?

A. Yes, sir.

Q. Now, for moving those points, so that you can come up to the socket on both sides when it is worn, and not move the fly-wheel sideways, you have to use both points?

A. Yes, sir.

Q. It is the screw part of the device that does the moving of the points?

A. Yes, sir.

Q. It is the screw that carries the points back and forth?

A. Yes, sir.

119 Q. Do you find anything in the defendant's device that will carry the bearing points back and forth?

A. No, sir; there is no way of adjusting the wheel sideways.

Q. In the defendant's device, the points are on the ends of the short shaft, are they not?

A. They are on the end of the crank.

Q. The end of the crank is down here (indicating). Is that point on the end of the crank here?

A. Yes, sir; that is on the end of the crank.

Q. Is this straight part, from there to that end a part of the crank?

A. I would consider it so.

Q. Why?

A. It is short.

Q. Is not this part that is at right angles to the axis of the motion the crank and nothing else?

A. The correct term would be a pivot.

Q. The pivot would be this point at the end, that it turns on?

A. Yes, sir.

Q. Is not the crank the arm which turns at right angles to the axis of motion about which the wheel revolves?

A. Yes, sir.

Q. Is there anything else than that of the crank, as you understand the term?

A. No, sir.

Q. Then, this straight point, which is in line with the axis of rotation is no part of the crank, is it?

A. No, sir.

Q. And this part that goes through the fly-wheel and ends off on this side is no part of the crank?

A. No, sir.

Q. Then those points are not on the end of the crank?

A. Then those become part of the fly-wheel.

Q. Those parts are not on the end of the crank, are they?

A. Yes, sir; I would consider they were on the end of the crank. I would use the term crank for them.

Q. Don't you consider that this is strictly a short crank shaft, from the end of one point to the end of the other?

A. No, sir.

Q. And is not that in the Dewey machine, in your judgment, a long crank shaft between those two points?

A. I would consider that a crank shaft (pointing to the blackboard).

Q. What is the difference between that and this, except that is much longer?

A. That is the difference (pointing); the length makes the difference.

Q. That is a part of the crank shaft, where it goes through the fly-wheel?

A. Yes, sir.

Q. It is all a crank shaft, is it not, except the part that is taken up by the crank itself?

A. I would give the term crank shaft to this part here.

Q. Why is not the other end of it a part of the crank shaft?

A. That is rather short to term it a crank shaft. I would not consider that.

120 Q. You never saw any very short shafts, did you?

A. Yes, sir; it is pretty hard to define the length of a shaft, what makes a shaft and what does not.

Q. You say that so far as those two screws are used for adjustment, and by this I refer to the screw itself and not to the point of the screw, you do not find their equivalent in the defendant's machine No. 3?

A. I do not find in this machine screws which can adjust the wheel this way or that way (illustrating).

Q. You say, as shown in the patent, the screws are used for driving backwards and forwards the point of the screw which constitutes the bearing? That is true, is it?

A. That, as I said before, would depend entirely on the construction of one of the screws.

Q. I am speaking about them, as you find them in the patent here. Does not the screw-thread, which is on the outside of the device, perform one service, that of moving the device backwards and forwards, while the point of the screw performs another service, that of carrying the crank of the wheel?

A. Yes, sir.

Q. Now, dividing the screw into those two points, considering one the point and the other the screw proper, do you find any device in the defendant's machine No. 3 which performs the operaton of those two screws—that of moving the bearing point backwards and forwards?

A. Yes, sir. In this I find a socket in which the pivot runs on, and a socket in that lug, which the pivot runs on, and by moving the lug backwards and forwards I can take up the wear.

Q. How do you move that lug backwards and forwards?
A. By pushing on it.
Q. You do it by hand, don't you?
A. Yes, sir.
Q. In the patent the screws are what moves the adjustments backwards and forwards?
A. Yes, sir.
Q. Do you find any mechanism in the defendant's machine which will move that adjusting part backwards and forwards?
A. It is moved by pushing on it with the hand.
Q. The question here is in the plaintiff's machine that is moved by the screw?
A. Yes, sir.
Q. That screw is a mechanism, is it not?
A. I don't know.
Q. There can be no question about that, I apprehend. Do you find any mechanism in the defendant's machine No. 3 which will move those points backwards and forwards, or move the sockets in which the points rest, backwards and forwards?
A. I find one socket that is movable. That is done by a lug in which a screw passes through.
Q. You do not find any socket in the patent which is movable, do you?
A. No, sir, I find a point.
121 Q. Whether you call the socket the same as the point or not in the defendant's machine, do you find any mechanism in the defendant's machine which will move backwards and forwards by operating the mechanism, either the sockets or those points? You may add to that, or either one of the points.
A. This mechanism may be moved backwards and forwards.
Q. You have stated that a number of times, and we all concede that. There is no dispute about it. It was shown probably the first half hour of the trial. Do you find any mechanism there which will move that movable part?
A. No, sir, there is no mechanism.
Q. If it is the office of the pointed screws which is on the outside to move those points backwards and forwards, you do not find any mechanism in the defendant's machine which will perform that service, do you?
A. No, sir, there is nothing here to move the screws.
Q. You find nothing in the defendant's machine which will move either the points of the bearing or the sockets of the bearings backwards or forwards, do you?
A. I don't quite understand that question.
Q. Is there anything movable in the defendant's machine except that socket?
A. No, sir.
Q. And the lug which belongs to it?
A. No, sir.
Q. In moving that lug and socket, do you have to move it by

hand, or is there some mechanism in the machine by which you can move it?

A. No, sir, you have to move it by hand.

Q. There is no mechanism in the machine by which you can move it?

A. No, sir.

Q. For the purpose of moving either the sockets or the points you find no equivalent in the defendant's machines of the screws described in the patent, do you?

A. I find the screw here (indicating).

Q. I am asking what you find in the defendant's machine, not what you find there.

A. I find there is no method of moving that wheel backwards and forwards, this way. You can move the wheel in this direction.

Q. The bearing is the point of the screw in the socket?

A. Yes, sir.

Q. It is the point of contact?

A. Yes, sir.

Q. The incline part of the screw is itself the bearing?

A. Yes, sir.

Q. If you turn the screw one way, you move that bearing backwards? And if you turn it another way, you would move it forwards?

A. I should have to move the two screws.

Q. You would have to turn both of them?

A. Yes, sir.

Q. Not to move one bearing?

A. Suppose this is rigid. To move that wheel backwards and forwards I should have to move the two screws.

122 Q. I am speaking about simply moving the bearing; that is, a single bearing. I have got it down to that now.

A. To take up the wear in the bearing, I could do that with one screw.

Q. You could do that by turning the screw?

A. Yes, sir.

Q. If you turned the screw, the turning of that screw would turn the bearings forward, and take up the lost motion?

A. Yes, sir.

Q. You recognize that screw as a mechanical device, do you not, one in common use by mechanics?

A. Yes, sir.

Q. For mechanical purposes?

A. Yes, sir.

Q. State whether you find any mechanical device here, which will move either the socket backwards or forwards, or the points of the crank backwards and forwards, any mechanical device which will do the moving.

A. This lug here (indicating). By pushing on the lug you take up the wear.

Q. It is the pushing that moves the lugs?

A. Yes, sir.

Q. Is there any mechanical device that will do that moving?

A. Yes, sir, by pushing on it, you can take up the wear on it, this mechanical device shown here.

Q. Will that mechanical device move itself?

A. No, sir.

Q. Is there anything there that will move it?

A. No, sir.

Q. That is what I am asking, if there is anything there that will move that lug?

A. No, sir.

Q. It has to be done by hand?

A. Yes, sir. I don't understand that question.

Q. There is no question about the fact; that is just as you have testified; that is, you have got to move this by hand. If you move it by hand, you can take up the lost motion?

A. Yes, sir.

Q. You have no device in it by which you can move it? You have got to move it by hand?

A. I have got to move the screw by hand.

Q. How long do you say you have been in the sewing-machine business in any capacity?

A. I am not in the sewing-machine business. I am a model-maker, machinist.

Q. When you speak of the old sewing-machine devices, did you speak of them as anything known by you? I refer to this style with the stud-form shaft.

A. I have seen those used years ago.

Q. A combination found in the different machines, in the old sewing machines, was there a treadle as in the present ones, in the defendant's?

A. Yes, sir.

Q. In the old sewing machines was there a pitman connecting the treadle with the crank fly-wheel?

A. Yes, sir.

Q. Is that the case with all the present machines?

A. Yes, sir, I believe so. I cannot say for sure.

Q. In the old sewing machines was there also a band connecting that band or fly-wheel which runs the machine above the
123 table ordinarily?

A. In this instance, of course there was, but I cannot say about the others. I am not sufficiently acquainted with sewing machines to say.

Q. In reference to this old one here?

A. Yes, sir.

Q. Assuming that this is an old one that has been used and is a correct specimen of the old ones, can you find anything in the plaintiff's patent in the general combination arrangement of the several devices which I have mentioned, that is, the treadle, the fly-wheel, a crank for the fly-wheel and a pitman which connects that crank with the treadle, and the groove in the band wheel for running the sewing machine on the top of the table?

A. It is.

Q. And it is a different machine from the machine shown in the Dewey patent, is it not?

A. Yes, sir.

Q. What is that?

A. That is a crank.

Q. A crank is a mechanical device for a practical purpose, is it not?

A. Yes, sir.

Q. Now, Mr. Wheaton tried to get it out of you, as I understand it, if you cut that thing off there that would be a crank. Would that be of any practical value in mechanics whatever without those crooked ends?

A. No, sir.

Q. A crank is understood to be a mechanical construction so constructed as to be of some practical use?

A. Yes, sir.

Q. Is it so understood in mechanics?

A. Yes, sir.

Q. And in order to be of practical use it must have points or ends to swing upon?

A. Yes, sir.

Q. I wish you would look at this book here, Webster's Dictionary, and read, as I desire to have it go into the record what a crank is.

A. "Crank: a bend in, or a bent portion of, an axis, serving as a handle for communicating circular motion, as the crank of a grindstone; or to change circular into reciprocating motion, as in a sawmill; or reciprocating into circular motion, as in a steam-engine."

Q. I will ask you if the bends of iron or the bends, whatever it might be, is not just as much a part of the crank as the lower or crooked part of it is, to make it useful.

A. Yes, sir; certainly.

Q. These ends here, or bends, as you may call them, are then simply a portion of the crank?

A. Yes, sir.

Q. If you extend them to any considerable length it may become a crank shaft?

A. Yes, sir.

Q. And then is used for a different purpose from a crank—when it becomes a crank shaft it is something else, different from a crank?

A. Yes, sir.

Q. It is used for different purposes, is it not?

A. Yes.

Q. Now, in the Dewey patent could you use for the purposes shown in that patent a simple ordinary crank like the one you hold in your hand?

A. No, sir.

Q. Why, you have to have a shaft, do you not?

A. Have to have a shaft; yes, sir.

Q. Having simply a fly-wheel and knowing fully the uses and

having the construction of the adjustable bearings in your mind, or in the mind of any skilled mechanic, would that information be sufficient to enable a skilful mechanic to make the Brill patent?

A. No.

Recross-examination.

Mr. WHEATON:

Q. Please look at these drawings in Webster, and state
126 whether you see in each of the first two drawings which represent an edge view of the crank, a wrist pin in each one of the cranks.

A. Yes, sir, I see a wrist pin there.

Q. Do you see any part of the shaft attached to the other end entering the other end of the crank?

A. I see two projections there that I would consider part of the crank.

Q. Have you ever seen or known a crank to be used by itself unless it was connected with other devices?

A. No, I don't think I have.

Q. A crank in and of itself as a mechanical device so far as you know is utterly useless, is it not, unless there are other devices attached to it?

A. I believe so.

Mr. SCRIVNER: I want to put in evidence this statement and file it as an exhibit in the case.

Mr. WHEATON: No objection.

The said statement was here introduced in evidence, marked Plaintiff's Exhibit 6, and is in words and figures following, to wit:

Net California Sales, 1880 to 1889 (Inclusive), Except "Southern District."

Counties.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	Total.
Alameda	180	275	188	336	374	131	153	249	347	182	2,415
Alpine	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	2
Amador	31	33	32	24	19	30	33	51	53	26	332
Butte	76	129	66	136	28	57	70	62	63	43	730
Calaveras	11	29	27	10	18	31	13	23	25	17	204
Colusa	111	56	56	59	56	45	41	49	24	40	537
Contra Costa	72	99	95	91	124	80	19	42	75	43	740
Del Norte	1	1	2	3	33	11	2	.....	1	.....	54
El Dorado	33	69	65	59	32	31	40	13	39	19	400
Humboldt	88	26	44	116	85	52	25	50	117	37	640
Inyo	1	.....	13	.....	.....	1	.....	26	20	.....	61
Lake	23	35	59	48	61	18	15	18	26	17	320
Lassen	10	4	19	28	17	22	21	22	29	2	174
Marin	22	16	22	52	36	3	2	5	4	1	163
Mariposa	1	15	9	35	26	17	2	17	9	6	137
Mendocino	44	36	88	107	100	43	21	67	115	36	657
Merced	57	58	28	44	43	32	17	32	26	20	357
Modoc	3	11	10	34	52	27	51	25	27	11	251
Mono	10	9	3	.....	.....	.....	.....	44	9	.....	75
Monterey	69	121	58	86	84	4	42	42	152	69	727
Napa	43	58	86	127	76	53	31	27	48	21	570
Nevada	37	91	76	94	89	63	33	39	62	19	603
Placer	46	51	109	56	56	37	20	41	41	25	482
Plumas	10	3	4	42	21	53	65	24	24	3	249
Sacramento	169	147	124	215	117	42	29	68	76	49	1,036
San Benito	66	70	28	41	36	29	41	25	33	16	385
San Francisco	911	1,036	1,349	1,148	719	442	816	829	1,115	613	8,978
San Joaquin	140	184	107	41	155	54	89	85	134	64	1,043
San Mateo	74	34	76	46	28	34	15	30	35	18	390
Santa Clara	185	196	205	140	101	166	209	201	308	135	1,846
Santa Cruz	93	59	47	61	104	59	73	82	180	72	830
Shasta	30	81	48	17	69	25	24	32	76	23	425
Sierra	.....	8	.....	26	9	62	29	27	29	.....	190
Siskiyou	.....	21	57	23	50	33	22	22	73	23	334
Solano	58	93	112	120	119	74	78	79	79	45	857
Sonoma	151	107	205	114	131	33	26	33	31	36	867
Stanislaus	90	73	48	51	65	32	47	25	46	20	497
Sutter	4	38	8	16	13	13	15	17	13	4	141
Tehama	64	126	57	12	58	31	62	30	56	46	542
Trinity	2	24	13	5	13	2	4	5	15	16	99
Tuolumne	16	36	13	.....	5	16	24	19	13	5	147
Yolo	43	88	108	130	104	37	14	27	16	16	583
Yuba	36	52	23	19	21	51	19	25	42	3	291
Totals	3,111	3,698	3,787	3,812	3,347	2,078	2,352	2,629	3,706	1,841	30,361

127 Mr. BRILL, the plaintiff, was here recalled for further cross-examination.

Mr. WHEATON:

Q. Mr. Brill, you testified, if I understood you rightly, that you are uncertain as to the amount that Mr. Eldridge paid you for the shop right, and was also uncertain as to the date. For the purpose of refreshing your recollection, if it will answer that purpose, I show you a dispatch from Mr. Eldridge, and ask you if it was not

on the 9th day of April, 1881, that you sold him the shop right, and if the price received was not exactly one hundred dollars.

(The said dispatch was in words and figures following, to wit:

"Dated BELVIDERE, ILL., 21 *Oct.*, 1891.

To the Singer M'f'g Co., San Fran.:

April ninth, eighteen hundred eighty-one, one hundred dollars.

B. ELDRIDGE.")

Mr. SCRIVNER: I believe the court ruled at the time that was asked that it was immaterial as to the price he got. The evidence showed that it was in settlement of a proposed lawsuit, whatever it may have been. Now, it is not fair to produce any such document as that.

The COURT: I don't think it is material, and the objection to the evidence is sustained.

Eleventh Exception.

To which said ruling of the court, counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. WHEATON:

Q. Mr. Brill, did you bring any suits for the infringement of your patent before your patent expired?

Mr. SCRIVNER: I object to that. That is wholly irrelevant and immaterial.

The COURT: The objection is sustained.

Twelfth Exception.

To which said ruling of the court, counsel for the defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Plaintiff rests.

Mr. KALLOCH: We desire to move the court now to instruct the jury, as to the first claim of the patent sued on, to bring in a verdict at this stage of the case for the defendant, and we make this motion upon the ground that the testimony in the case thus far shows conclusively the absolute lack of patentability and novelty of the
128 alleged invention, and an absolute anticipation of that alleged invention, as well as to conclusively show non-infringement by the defendant of the device, and we desire at the same time to move as to second claim of the letters patent sued on, that the jury be at this stage of the case instructed to bring in a verdict for the defendant, upon the same grounds, that the evidence has conclusively shown the utter want of patentability and novelty in the

alleged invention, the absolute anticipation of the device, and the non-infringement by the defendant.

The COURT: I am prepared to rule on this question. Let it be overruled. I overrule the motion as made.

Thirteenth Exception.

To which said ruling of the court counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. Wheaton thereupon made the opening statement on behalf of the defendant, after which GEORGE GOWING was called and sworn on behalf of the defendant, and testified as follows:

Mr. WHEATON:

Q. What is your business?

A. I am in the *the* sewing-machine business, and have been since 1858. I am in the employ of the defendant at 22 Post street in this city.

Q. How long have you been in the employ of the defendant?

A. Well, irregularly since 1863.

Q. In what other parts of the United States have you been engaged in the sewing-machine business in any form?

A. In Boston, Massachusetts.

Q. In whose employ were you there?

A. In the defendant's in this case principally, and also with the Grover and Baker Company.

Q. What years were you in the sewing-machine business in the East?

A. From 1858 to about 1873.

Q. When did you come to California?

A. In 1874.

Q. This suit was commenced the 14th of May, 1891. Had you never heard of the Brill patent before that?

A. No.

Q. Had you ever heard or seen any wheel—sewing-machine wheel, either with or without any connections or attachments connected with it, that was called the Brill wheel?

A. No.

Q. Now, will you point out the differences in the construction, if there are any, between the defendant's crank and its bearings in Exhibit No. 3, and the apparatus shown in the Brill patent?

A. I find in this model a balance wheel with a crank attachment hung by two centres—two screw centres—one of the screw centres supported by a bracket at the table top, and the other by a standard. In the defendant's wheel I find nothing in common with it except the standard supported by the two points, and adjustments
129 being by a loose lug, which is moved forward by loosening and tightening the screw which holds it in position. The

occupation of the two wheels are similar, as connected with the treadle.

Q. As shown in the plaintiff's patent, what do the two screws do?

A. Well, they form a support for the driving wheel—crank wheel.

Q. I do not mean the screw points, but the screws themselves.

A. Well, they form a means of keeping the wheel in position.

Q. State whether or not the screws carry the screw point back and forth to and from the wheel.

A. They will if they are moved.

Q. Well, do they do anything if they are not moved?

A. No.

Q. The screws?

A. No, sir.

Q. Now, is there any mechanical device in the defendant's machine No. 3 that will move the bearing points or any bearing back and forth away from and towards the wheel?

A. There is not.

Q. Please state whether there is any mechanical devices, whether or not you can find any mechanical devices in the defendant's machine that performs the operation of those two screws or either one of them; I refer to defendant's machine No. 3?

A. I do not.

Q. Explain to the jury how the wheel is held in place in Exhibit No. 3?

A. The wheel is held in place by pointed centres with the crank shaft being inserted in the standard—this outside standard. On the brace running down from the top of the standard to the lower part there is an adjustable lug with a corresponding centre—corresponding socket to the other end on the standard. This lug is held in position by the set-screw. This lug contains a slot held in position by the set-screw, and if the set-screw can be loosened from the slot it can be brought forward to the point centres, and then this is tightened, to be held in position by this set-screw, and then the wheel is properly to be where it is supposed to belong.

Q. Do you understand the bracket that is described in the plaintiff's patent?

A. I do, yes, sir.

Q. State whether or not that bracket is in either one of the defendant's machines.

A. I do not see it. I do not find it.

Q. How is that?

A. It is not there.

Q. Please look at this drawing on the blackboard, made from the Dewey patent by the plaintiff's expert, and state whether or not you understand it?

A. I think I do, yes, sir.

Q. Have you examined the drawings of the Dewey patent?

A. Nothing further than you have it on the board.

130 Q. State what difference, if any, there is between this bearing at the left hand of the fly-wheel and the bearing on the plaintiff's apparatus on the outside of the fly-wheel?

A. I find no difference.

Q. State what difference, if any there is, between the adjustable bearing on the right-hand side of the Dewey patent on the black-board and the inside of the plaintiff's apparatus?

A. Do not find any difference there.

Q. Are you familiar with the old style of sewing machines which contained fly-wheel revolving upon a stud, as shown in this device?

A. I am.

Q. How long have you been acquainted with those?

A. Well, that is the earliest form of sewing machine that was ever made—revolving wheel. I am acquainted with those since 1858.

Q. State whether or not there were prior to 1872—that is, prior to July, 1872, any methods known among sewing-machine manufacturers for taking up the wear and stopping the rattle in this kind of sewing machine?

A. Yes, sir, there were one or two devices.

Q. Please describe what they were; those that you knew of your own knowledge?

Mr. SCRIVNER: We have no notice of that sort of matter. What do you offer it for, Mr. Wheaton?

Mr. WHEATON: To show the state of the art.

Mr. SCRIVNER: With that restriction he can do it, but let that be understood.

The WITNESS: One form of adjustment was by using the same style of a stud, with the exception that this is—the other wheel was reset—cone-shaped. The stud was made with a cone-shaped head. This stud screwed into the standard run in with the screw-driver in this end, and this was driven into the proper position, so that the wheel had its bearings on the cone-shaped head of the stud, so that it would have to run freely and without shaking, without extra movement; carried a checked nut on the outside of the standard, the same as this stationary stud does, and when this was screwed into the stud, this was screwed on the outside, holding the stud in the proper position. That would run until sufficient wear had come to make it loose, and this was made loose, and taking your screw-driver, and turning your nut in a trifle more, taking up any wear that had been received by the wheel in common use. In that manner the wheel was brought into the original position; that is, as far as proper running was concerned. One other adjustment was screwed upon the two cones, one from each side of the wheel.

131 Those cones, one was on a stud, and the other was stationary, and the other was adjustable at the end, and the wheel itself run on the two cones, rather than on the stud, the stud being made smaller in diameter than the core of the wheel, and consequently the stud was made to run on the cones in that manner.

But the second adjustment had the merit of doing away with a certain amount of friction, because it only run on the two cones, while this run the entire length of the stud. These are the only two that I call to mind at present, and that is one of them that I last described.

Q. Please take the bolt that I now show you and explain to the jury what that is.

A. That is the stud that I was just describing. This carried a thread, so that the wheel could not run on that stud. It must run on the cones. This was secured in that manner, and this was screwed in the standard of the leg, and checked in that manner. Now, the wheel running on these two cones reduced the friction of the wheel, and also done away with any rattle.

Q. How long do you know of that device, which you have just described, being in use among sewing-machine makers and dealers?

A. That I could not tell you, the exact date, but it was before 1870. The stud was gotten up by somebody outside. It was not got out by a sewing-machine manufacturer; but it was sold through dealers. Many people who were buying machines were buying those to replace old studs.

Q. How extensively was that device used, to your knowledge, prior to 1872?

A. Well, it was used, to my knowledge—it was used mostly by people who were dealing in machines in a small way, repairers, and that class. I do not think any companies had adopted them.

Q. I want to know how extensively those were used.

A. They were quite commonly known; I think every sewing-machine man knew them.

Q. Does your last answer apply to dates prior to 1872?

A. Yes, sir.

Q. Now, what is there in the pointed screws of the plaintiff's patent that constitutes the bearing that supports the fly-wheel, I mean the bearing part?

A. Point of the screw.

Q. What shape is that point?

A. Conical.

Q. What is the difference in the operation—what shape is the bearing part of the screw on the other side?

A. It is conical also.

Q. Now, in this device which you have explained, how many cones, which constitute the bearing points, are there in it?

A. Two.

Q. In this plaintiff's apparatus how many cones are there which constitute the bearing points?

A. Two.

Q. What difference is there in the operation between using the cone shown in that ancient device—the two cones used in
132 that ancient device that you have described, and the two cones used in the plaintiff's apparatus?

A. None whatever.

Q. Please state your experience as a mechanic.

A. Well, I served my time at manufacturing machinery—cotton and rope manufacturing. In 1857 I entered the employ of the Grover and Baker Sewing Machine Company, in the factory. I was in factory three years as a mechanic.

Q. Then for how many years have you been a practical mechanic at work in the manufacture or repairing of sewing machines?

A. I consider I have been since 1857.

Q. Do you mean continuously all the while?

A. Not continuously. I have been two or three—there are two breaks that I was back East, from 1883 to 1886. At that time I was not giving very much time to the mechanical part of sewing machines, but other than that I have been in the business all my life.

Q. Now, please state whether in your opinion as an expert it would require any invention or not to take the bearings, the pointed screw bearings shown in the Dewey patent and substitute them for the bearings which were shown in the machines which were in use prior to 1872.

A. Well, I think if a man had conceived the idea of improving on that style of wheel he would very readily adopt a device of that kind for the improvement required.

Q. Suppose that in the use of the old-style machine a skillful workman who understood the Dewey patent as well as the ancient devices which you have described, and also these stud machines used without any cones, was using a machine, and it wore so as to cause lost motion, made the wheel run untrue, and create a disagreeable noise, state whether or not it would require any invention upon his part to substitute in the place of the stud bearings the bearings which he knew existed in the Dewey machine, or whether he would be able to do that by virtue of his knowledge of his business without doing any invention whatever.

A. I think I understand the question thoroughly. I think it would not.

Q. Please look at this device and state if you know what it is.

A. That is a crank shaft.

Q. Why did you call it a crank shaft?

A. Because it combines a crank and a shaft.

Q. Which is the crank portion of it?

A. The crank portion is the right angle or offset.

Q. Right angle to what?

A. Right angle to the axis of the shaft.

Q. And which is the shaft portion?

A. The shaft portion would be the extension from the crank.

Q. In what direction does the shaft portion run as compared with the axis of rotation?

A. It is parallel with it, if I understand your question.

133 Q. You understand what the axis of rotation is?

A. Yes.

Q. State whether or not that is one of the crank shafts which the defendant used in his machine No. 3.

A. It is.

Cross-examination.

Mr. SCRIVNER:

Q. What is your age?

A. I am 54. I have been in the employ of the defendant about 20 years. About nine years in California.

Q. In what capacity were you employed by them first?

A. I was employed in their adjusting and machine room of the main office in Boston, adjusting machines, putting them together and repairing them.

Q. You did not have to assist in the manufacture of any of the parts of a machine?

A. Not at that time, no.

Q. You stated in your examination that you claim to be a mechanic. Where did you learn your trade?

A. In Massachusetts, at Waltham.

Q. How did you learn your trade?

A. I spent my first two years or year and a half in the manufacture of cutlery, small tools, such as cheese-tryers, butter-tryers, and that class of work. I was then an apprentice for four years and a half.

Q. Then where did you go?

A. To cotton and rope machinery.

Q. Were you engaged in the manufacture of any of the parts of those machines?

A. You cannot work on any kind of machines without being engaged in the part of manufacturing it.

Q. You cannot tell any of the parts you worked on?

A. No, sir; I worked at lathe-work and bench-work, and anything that was required.

Q. Since you have been in California, in what capacity have you been employed?

A. In the general adjustment and looking after machines outside of the office; in the factories and that class of work, and in selling machines. It is outside principally, what we call adjusting.

Q. Where were you in 1872?

A. In Boston, in the employ of the defendant company.

Q. Where were you in 1879?

A. I was in San Francisco, in the employ of the defendant.

Q. When was the first time you ever saw a machine such as Plaintiff's Exhibit 3?

A. I could not tell you.

Q. Could you guess?

A. I can guess, yes.

Q. Well, guess.

A. I think it was about 1883, or something about that time, in Boston.

Q. You say you are a mechanic? Can you tell me what a cone is?

A. Yes, sir, I think I can.

Q. What is it?

A. It is a piece of metal that starts from a centre point and enlarges equally from that centre point.

134 Q. From the base to the point, there is a constant decrease in size, down to a point?

A. Yes, sir.

Q. You were asked the other day by Mr. Wheaton, if those screws were cones. What was your answer? Do you remember?

A. If he asked the question I think I should have said they were.

Q. You say a screw with a conical point is a cone?

A. No, sir, I should not say that was the exact term exactly.

Q. Then you did not mean what you said, when you said that screw was a cone, in answer to Mr. Wheaton?

Mr. WHEATON: I did not ask such a quest-on, and he did not make such an answer.

Mr. SCRIVNER: I have the testimony here; let us see whether he did or not. I will have to read several questions to get at it. It begins—

"Q. Now, what is there in the pointed screws of the plaintiff's patent that constitutes a bearing that supports the fly-wheel—I mean the bearing part?

"A. Point of the screw.

"Q. What shape is that point?

"A. Conical.

"Q. What is the difference in operation—what shape is the bearing part of the screw on the other side?

"A. It is conical also.

"Q. Now in this device which you have explained, how many cones which constitutes bearing points are there in it?

"A. Two.

"Q. In this plaintiff's apparatus how many cones are there which it has the bearing points?

"A. Two.

"Q. What difference is there in the operation between using cone shown in that ancient device that you have described and the two cones used in the plaintiff's apparatus?

"A. None whatever."

Mr. WHEATON: They are bearing points.

The WITNESS: That is the way I understood the question.

Q. You did not mean to testify that those screws were cones?

A. A screw was a screw.

Q. You mean to say that it was a screw with a conical point. What is a crank in mechanics, an ordinary crank?

A. It is that section of a shaft which is at right angles with the shaft itself.

Q. What is a crank shaft?

A. My opinion of a crank shaft is, that it is a crank with projecting ends, from one or both sides of the centre of axis, of sufficient length to provide for its bearings and the carrying of a wheel to transmit a motion, which would constitute a crank shaft.

Q. What is the difference between what is known in mechanics as an ordinary crank and a crank shaft?

A. I don't know that you can separate them. I don't think a crank without a shaft is any crank.

135. Q. You do not think there is anything in mechanics known as an ordinary crank, as contradistinguished from a crank shaft?

A. No, sir.

Q. What part of that instrument do you call the crank?

A. I call this part the crank (indicating).

Q. Which part?

A. The part that turns up here.

Q. And you call this the shaft?

A. Yes, sir.

Q. If you cut that off there (indicating), what would you call it?

A. A bent piece of iron.

Q. Then we get right down to it; there is no such thing in mechanics as an ordinary crank used, contradistinguished from a crank shaft, in your opinion?

A. In my opinion.

Q. Just look at these drawings, and take this pencil, and mark what you consider to be the crank, if any.

A. It is the same as Exhibit 3.

Q. Put marks there as to what you consider to be the crank shaft in that device.

A. I consider this part of it, from the centre of axis back again to the crank.

Q. Make your marks plain there. The part of that above your marks is what you consider the crank part of it?

A. Yes, sir; I consider it all from the centre of the line of axis.

Q. You have made your marks. Will you stand by them?

A. I stand by the lower mark.

Q. Look at that. What is that (handing a piece of iron to the witness), in mechanics, I mean?

A. I should call that a staple.

Q. If you turn the points up, what would that be?

A. That is for another purpose.

Q. What would it be?

A. If it is in proper shape, and put into proper connection, it is a crank shaft again.

Q. Here is a similar piece of iron. What do you call that?

A. It depends on what purpose it is made for.

Q. It does not make any difference what it is made for. What is it?

A. A thing that can be converted into a crank shaft, or is a crank shaft as it now stands.

Q. Everything in mechanics is a crank shaft, according to your idea?

A. If it is used for the purpose of a shaft.

Q. So far as your opinion goes, there is no difference between a

simple ordinary crank and a staple, if you leave off what you call the shaft?

A. No difference in the form.

Q. That is what I am talking about, the form. You could not use a staple for a crank?

A. No, sir.

Q. And you could not use a crank for a staple?

A. Not very well.

Q. The reason is because the ends are turned up?

A. Because one is made for a crank shaft and the other for a staple.

136. (The pieces of iron are marked Plaintiff's Exhibits 6 and 7.)

Q. You are familiar with this old stud wheel used by the defendant?

A. Yes, sir.

Q. You don't know when they abandoned that and adopted Exhibits 3 and 5, of your own knowledge?

A. I cannot tell you.

Q. Do you know why they adopted Exhibit 3 instead of this?

A. They did not adopt it instead of that. There was an intermediate style which was used.

Q. They do not use Exhibit 4 any more?

A. No, sir.

Q. And they are using Exhibit 3 and 5?

A. Yes, sir.

Q. Do you know why they use Exhibit 3 and 5 instead of 4?

A. I don't know why.

Q. In your opinion, as a mechanic, is 3 and 5 superior to 4?

A. I should think it was.

Q. Why?

A. For several reasons.

Q. It runs lighter?

A. Yes, sir.

Q. The bearings are adjustable?

A. Yes, sir.

Q. You can take up lost motion, of course, by the adjustable bearings?

A. Yes, sir.

Q. You can thereby obviate the noise, if any?

A. Yes, sir.

Q. And you can by these devices make the wheel always run true and smooth?

A. Yes, sir.

Q. Consequently, in your opinion, Exhibits 3 and 5 are superior to 4?

A. Yes, sir.

Q. Now, in 3 and 5, the power is applied at the centre of the wheel?

A. Yes, sir.

Q. So that the pressure is always directly upon the bearings, is it not?

A. It is.

Q. There is no tendency in this device to a side-jamming motion?

A. Not to any extent.

Q. Not to any appreciable extent?

A. No, sir.

Q. And the friction and wear are reduced by those means?

A. They are.

Q. By that arrangement a great advantage is obtained, as the crank presses down in direct line, both on the side of the frame and upon the central brace; is not that the case?

A. It is.

Q. Thereby equalizing and distributing the weight throughout the centre frame without any lateral pressure. Is not that so?

A. Yes, sir.

Q. So that, in that device, Exhibit 3 and 5, you find that the cost of a machine and the friction is reduced, do you not?

A. I don't see that the cost of the machine is reduced.

Q. The friction, then?

A. The friction is reduced.

Q. In Exhibit 3, what is the brace used for?

A. Used to brace the stand of the machine.

Q. For no other purpose?

A. For the support of the driving-wheel shaft, one end of it.

137 Q. Have you examined the plaintiff's patent?

A. I have read it, I have not studied it particularly.

Q. Looking at the model of the plaintiff's machine, described in the patent, Exhibit 2, you find adjustable bearings there?

A. Yes, sir.

Q. Which would reduce the friction and ease of operating the mechanism?

A. Yes, sir.

Q. Do you find any practical results shown in the Defendant's Exhibit 3 and 5 different from that which is shown in the plaintiff's model?

A. I do in one point, yes, sir.

Q. What is it?

A. I find it more practical to attach the crank shaft to the base of the standard rather than the bracket.

Q. That is a mere matter of degree?

A. Yes, sir.

Q. But the results are similar?

A. The results are similar.

Q. You think it is better to use the brace there instead of the bracket?

A. Yes, sir.

Q. Your idea is that it would be stronger?

A. The brace is rigid. It is confined or fastened at each end, while the bracket is suspended and fastened to one end only.

Practically, if you adjust those screws it would bring the brackets away from the bearings or centres.

Q. Have you ever read the Dewey patent?

A. I think I have.

Q. You have stated that these crank wheels, as shown in Exhibits 3 and 5 and shown in the plaintiff's model, are all superior to the old-style machines, as shown by Exhibit 4?

A. Yes, sir.

Q. And you undertook to testify yesterday or Friday, in your direct examination, as I understood you, that seeing and knowing the use of the fly-wheel shown in the Dewey patent, and the bearings shown there, that that would suggest the use of a fly-wheel, and the use of bearings in these other-style machines; is that correct?

A. Not exactly in the way you put it. I said any one having the idea of improving the old style, that would give them the knowledge that they were looking for, and they would see at once that they had the advice that would give the improvements.

Q. You see a good many things in plaintiff's model and in Exhibits 3 and 5 that you do not see in the Dewey patent?

A. It is a matter of construction.

Q. You see a good many things there in those models that you do not see in the Dewey patent?

A. I see the principle running through the same.

Q. Answer my question. We will come to the principle by and by?

A. I think I answered your question. I said it was a matter of construction.

Q. That does not answer my question. You can answer it
138 directly. That requires an answer yes or no. Read the question, Mr. Reporter.

(The reporter reads the question.)

A. I see one thing.

Q. What is that?

A. A crank shaft.

Q. You do not see that in the Dewey patent?

A. No, sir.

Q. Do you see any bracket or any use of a bracket?

A. I see a bracket.

Q. Where?

A. Here. Reverse that and you have a bracket.

Q. Which do you refer to?

A. This (indicating).

Q. Is not that the standard of the machine?

A. When it is on here (indicating). If you turn it up it is a bracket.

Q. I ask if there is anything shown or suggested in this drawing for these marks on the side, other then the legs of the machine—if there is anything suggested?

A. This represents a standard. It does not represent any legs of any machine.

Q. What does this represent here (pointing)?

A. A standard as it is placed on the board.

Q. Does it not mean the leg of the machine on which the machine rests?

A. I don't consider it does.

Q. If you turn this standard up, where is the leg of the machine?

A. It is independent of this.

Q. Is it shown in the drawings?

A. No, sir.

Q. Then you are speculating?

A. No, sir, you asked me if I saw anything different.

Q. Precisely?

A. I did.

Q. But you have gone off and tried to tell me that those legs there or standard of the machine, represent the bracket?

A. I said if it is reversed.

Q. Do you see anything in the patent to suggest reversing?

A. Not in that drawing.

Q. In that drawing, or in the Dewey patent, you see nothing to suggest reversing the standard?

A. No, sir.

Q. And turning it up?

A. No, sir.

Q. Do you see anything in that Dewey patent to suggest the bracket, or the brace, or the use of it?

A. I see the standard.

Q. Seeing that standard, upon which the bearings rest, upon which the crank shaft rests, seeing that, you see enough to suggest reversing the standard, and turning it up?

A. If it was necessary.

Q. Do you see anything in that Dewey patent that would suggest anything different from the device as shown in the models?

A. I think any skilled mechanic looking for improvements on the old style of wheel, seeing this, would see at once that he had what he required to make the improvement, and would adopt it to any place he wished to use it.

139 Q. Don't you know as a matter of history, that there have been numerous patents taken out on sewing machines?

A. Yes, sir.

Q. Don't you know that inventors and skilled men, for the last 40 years, have been engaged actively in searching for all the improvements that could be made in sewing machines?

A. I do.

Q. Tell the jury why it was, admitting these things are all better than the older style, that it took the defendant 10 or 15 years, and not until after Brill's patent came out, to get from the Dewey patent to Exhibits 3 and 5.

A. I cannot tell that; perhaps they were not searching in that direction.

Q. You know every one was searching for all the improvements that could be made?

A. Those things came gradually.

Q. It was a gradual step; step by step, from the Dewey machine to the plaintiff's?

A. Allow me to explain. This is a device for a sewing machine. The construction is there as you see it, showing some one had those ideas previously.

Q. Do you know what that Dewey did after he got up that?

A. Yes, sir; the special feature of this is a device shown here. It was to provide a continuous motion of the driving shaft in one direction only. In other words, is was to prevent a sewing machine from running backwards by the action of the treadle. The other details of the construction of the drawing relate to construction only, showing that this must have been in existence at the time.

Q. Have you ever seen a sewing machine with the ends of the crank shaft resting on the two standards prior to 1872?

A. I cannot say I did.

Q. This man Dewey was not inventing or prospecting in the line of the wheel, not so far as is shown in that drawing?

A. No, sir.

Q. In all your experience of 30 or 40 years, you cannot tell us why it took so long for the sewing-machine companies, particularly the defendant, step by step, to get from the Dewey patent to the plaintiff's device, or to their Exhibits 3 and 5?

A. That did not come into my line of business.

Q. As a skillful mechanic cannot you give some idea?

A. If I had been looking for it myself, and had seen a drawing like that, I think I readily could have applied it to any sewing machine in use.

Q. When was the first time that you saw the Dewey patent?

A. About two months ago.

Q. We will say you have never seen the plaintiff's patented device, nor the defendant's, do you pretend to tell me and this court and jury, as a mechanic, looking at the Dewey patent, the specifications and drawings, you find in that patent such a plain,
140 clear and exact description of the plaintiff's patented device, as would enable one skilled in the art, from those drawings and that patent alone, to construct the plaintiff's patent device?

A. I think so; yes, sir.

Mr. WHEATON: We object to the question as calling on the witness to tell what are the patented devices. If counsel leaves out the word patented, there is no objection to the question.

Mr. SCRIVNER: Tell me and the jury again, what the things in the Dewey patent are, which, in your judgment, would enable such a skilled mechanic to construct the device described in the Brill patent.

A. You have the central bearings, the adjustable screw, and the balance wheel. All that is eliminated is the crank shaft.

Q. You cannot tell why it took 10 or 15 years to do that?

A. I am not supposed to tell it.

Q. You would consider it a very easy matter for a mechanic to go from the Dewey machine to the plaintiff's device?

A. If he was trying to make that improvement.

Q. Now, you have said there was some machine between the original stud wheel shown in Exhibit 4 and Defendant's Exhibit 3?

A. Yes, sir.

Q. Why did they not go right at once to Exhibit 3?

A. I could not tell you.

Q. What was the construction of that machine that was used by the defendant, between the original stud machine and Exhibit 3?

A. It was a stud similar to the one there, with a conical head.

Q. This is the one (indicating)?

A. Yes, sir.

Q. This cone-shaped stud came in between?

A. Yes, sir.

Q. What were they looking for; what is your idea that they were looking for, when they used that?

A. They were trying to improve that.

Q. They were trying to take up the lost motion?

A. Yes, sir.

Q. To make the wheel adjustable?

A. Yes, sir.

Q. It was not satisfactory?

A. No, sir.

Q. They had to come to Exhibit 3?

A. They did afterwards.

Q. Now, then, tell me as a mechanic why some of your employees did not suggest to them to go from the Dewey patent at once to Exhibit 3, if it was so easy. It was a very easy thing and no invention, you say. Why did you not go straight from the Dewey patent to Exhibit 3?

A. I don't think I said it was no invention.

Q. Do you mean to say that Brill's patent describes an invention?

A. I said that if a person had the idea on their mind of improving the old stud, and had the drawing before them, they could produce the Brill device.

141 Q. By use of inventive faculties?

A. Call it as you choose.

Q. Do you know where the line of distinction between the skill of the mechanic and the skill of the inventor comes in?

A. I think they are combined very often.

Q. Is there any distinction between the exercise of mere mechanical skill and invention?

A. Yes, sir.

Q. What is it?

A. One wants the mechanical practice to execute his inventive ideas. The other may be a skilled inventor, but he must employ a mechanic to carry out his ideas.

Q. You do not pretend to say there was no invention in going from the patent to the plaintiff's device?

A. I do.

Q. Now, you say there was no invention?

A. No invention between that and this; it is a difference of construction.

Q. You are a skilled mechanic of some 14 or 15 years' experience. Tell us why they did not jump from the Dewey patent to Exhibit 3.

A. I cannot speak to that.

Q. Do you know how long they tried this cone-shaped stud?

A. A good many years, some years.

Q. We will carry it a little further. Suppose a man did not know anything about the Dewey patent, would it require, in your judgment, invention to get up any of these crank wheels shown by the plaintiff's patent, or in the Defendant's Exhibits 3 and 5?

A. To a certain extent, I think it would.

Mr. WHEATON: I object to this. It is totally irrelevant and calling for incompetent testimony.

The COURT: I overrule the objection.

Fourteenth Exception.

To which said ruling of the court, counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. SCRIVNER:

Q. If there might be invention in getting up the plaintiff's patented device, providing the Dewey patent had not existed, the only reason why you think there is no invention in the plaintiff's patented device, is on account of the prior existence of the Dewey patent?

A. No, sir.

Q. What is the other reason then?

A. Because the pointed screws were in common use for various purposes—adjustable screws.

Q. You probably did not understand my question. As I understood you to state a little while ago; if a man did not know of the Dewey patent, there might be invention in getting up the plaintiff's patent; is that what you mean?

A. To a certain extent.

Q. To what extent; how much invention might there be?

A. It would depend on his knowledge of existing devices.

142 Q. I will repeat the last question. Assuming that there might be invention in the plaintiff's patent if he did not know of the existence of the Dewey patent, that is the only reason why you claim there is no invention in the plaintiff's patent, is it not?

A. I think that covers the position.

Q. So that in your opinion as an expert, if the Dewey patent

does not describe the plaintiff's patented devices in such clear and exact terms as would enable one skilled in the art, to make the plaintiff's patented devices, or the devices described in his patent, then you could think that the plaintiff's patent described an invention, would you not?

A. No, sir, not with those drawings before him, I would not.

Q. You do not understand my question. Read that question Mr. Reporter.

(The reporter reads the question.)

A. I think that answer is right, if he had those drawings.

Q. You do not understand me. I will have to explain it a little. I say, if as a matter of fact, it should turn out that the Dewey patent with its drawings do not describe the plaintiff's patented device in such full, clear and exact terms, as would enable a skilled mechanic to, from the patent itself, make the patented device, then you would think there was no invention?

A. I understand the Dewey patent to relate simply to a special feature of the drawing. Leaving that out, the construction of the other is a matter of detail or construction.

Q. As a matter of fact, you do not find in the Dewey patent such a construction of mechanical device in the treadle wheel of a sewing machine as is described in the plaintiff's patent, do you?

A. The description as far as principle and operation is concerned, are similar and would be similar.

Q. Do you find a clear and exact description of the devices shown in the plaintiff's patent, in the Dewey patent? Read it over if you do not understand me.

A. No, I do not. It does not relate to anything similar.

Q. Then you do not find in words, or otherwise, a clean, clear, exact description of the devices shown in the plaintiff's patent?

A. No, I do not.

Q. Then, if you do not find them there, will you please tell us how you know, from the Dewey patent, if the devices are not described in the Dewey patent, as described in the plaintiff's patent—tell us how, from that patent, you are going to construct the devices shown in the plaintiff's part.

A. I think a skilled mechanic, looking at the drawings, would see at once that the requirements are there.

Q. Would see at once the devices shown in the plaintiff's patent?

A. No, the requirements.

143 Q. I am not talking about the principle, but about the mechanism about the machine.

A. You are talking about the difference of construction. It is a difference in construction only.

Q. You do find a difference in the construction of the Dewey machine and the plaintiff's machine?

A. And construction only.

Q. Tell us what you mean by the difference in construction.

A. I find in the Dewey patent the driving wheel, the balance wheel——

Q. (Indicating.) Do you find that in the plaintiff's?

A. Yes, sir, the supporting centres. I find the adjustable screw. I find provision for the bracket or standard of those screws, and I find the crank shaft.

Q. You find a crank shaft?

A. Yes, sir.

Q. You claim that the standard might be reversed and become a bracket?

A. Yes, sir.

Q. What would you fasten that to?

A. To a table, if I had one.

Q. Then what would it rest on?

A. On the table.

Q. What would the bearings rest on? The crank shaft, what would that rest on?

A. It would not need the rest. It would become a bracket the same as this one.

Redirect examination.

Mr. WHEATON:

Q. You were asked whether the standard at the left hand of the Dewey machine would suggest the use of a bracket such as is shown in the plaintiff's model. I will ask you whether the bracket, such as is shown in the plaintiff's model, would suggest the use of this old brace for the purpose of providing the bearing for the adjustable screws, or not?

A. It would not. The brace being there, the natural course for them would be to adopt it, as being a better arrangement than a bracket.

Q. How does the brace shown in the defendant's machine compare with the braces which were used by the defendant prior to 1872?

A. About the same thing.

Q. What is it that constitutes the whole brace shown in the defendant's machine?

A. This part that runs down here and goes to the bottom part of the leg, and fastened at the four points of contact.

Q. How far does the brace run down?

A. Down to this point.

Q. And this point over here?

A. Yes, sir.

Q. How many arms or branches does it have?

A. Four.

Q. If that brace was used by the defendant prior to 1872, could it have used the bracket shown in the plaintiff's model without changing that brace?

A. No, sir.

144 Q. Taking it out?

A. No, sir.

Q. What is a check or jam nut?

A. It is sometimes used, sometimes two nuts; if you have a stud it is screwed into a standard of any sort; any pulley or any other matter rotating on it, it is liable to become loosened, and the second nut is placed there and set up against the first nut to prevent it from working off.

Q. State whether or not in the defendant's machine No. 5 there is in connection with the screw any check or jam nut?

A. Yes, there is.

Q. Why is that placed there?

A. It is placed there to hold the adjustment of the screw against the centre point of the crank shaft.

Q. Supposing that check or jam nut was not there, what would be the result?

A. The adjusting screw would loosen.

Q. Do you find any check or jam nut shown in the plaintiff's patent or in the model, in connection with those screws?

A. I do not; a simple nut.

Q. State whether, in your opinion, those pointed screws would be practicable devices for adjusting and holding the crank of the driving wheel in place without jam nuts.

A. It would not; yet they might be used if they were fitted very tightly; set in tight with a screw-driver they might possibly stay. In ordinary work they will work out.

Q. You were asked on cross-examination as to the reduction of costs in using the screws. State whether or not, it would reduce the cost of the defendant's machine, as they were making and selling it in 1872, to have changed the stud and its bearings, and put in place of it the adjustable bearings and crank shown in the plaintiff's model.

A. I should say it would not.

Q. Which of the two forms of apparatus will cost the most to make?

A. I think the device shown in the model. There is more material, more labor, and more adjustment.

Mr. SCRIVNER:

Q. Do you undertake to say that screws, such as are shown in the plaintiff's device, would not be practicable for holding that wheel in place?

A. It would be practicable for holding it in place providing you did not use the wheel.

Q. When you do use the wheel in a sewing machine?

A. Yes, sir.

Q. Tell the jury why those screws arranged in the Dewey patent are not practicable.

A. I say the same with regard to those.

Q. Then that does not describe a practicable machine, the Dewey patent?

A. I don't know that.

Q. Tell the jury whether it does or not, in your opinion.

A. It is practicable with the exception of the jam-nuts.

145 Q. I am talking about this thing, as it is shown in the patent, with its screw adjustment.

A. It is practicable.

Q. Is it any more practicable than it is in the plaintiff's machine?

A. It is practicable for adjustment and not for use.

Q. Do you pretend to say that the screw adjustment, the point centres, and the screw bearings shown in the Dewey patent, are not practicable for practical use in a sewing machine?

A. As I answered the question, if they are tightly fitted they are practicable, if ordinary they are not.

Q. If you do fit them tight they are good?

A. Yes, sir.

Q. If you do fit these tight for practical use, they are good, too?

A. Yes, sir.

Mr. WHEATON:

Q. Now, state whether any mechanic of ordinary skill, in the habit of using that class of adjustable bearings, would not know, from his experience and knowledge of his business, that those checks or jam-nuts would be necessary to be applied to the Dewey bearing.

A. It is a common form of holding a check-screw or adjustable screw in position. If they were not required, they would not be used.

Q. Would an ordinary mechanic, in the habit of making and using that class of bearings, know whether it was best to put those checks or jam-nuts there or not?

A. He would know that it was best to put them there.

ARTHUR F. L. BELL, called as a witness on behalf of the defendant, was sworn, and testified as follows:

Mr. KALLOCH:

Q. What is your business?

A. Mechanical engineer, ten years, in San Francisco, in the employ of the San Francisco Tool Company; I am now in charge of all their mechanical departments.

Q. What have you to do in that capacity?

A. I am the superintendent and chief engineer of their entire works.

Q. What is the business of that company?

A. It is a general machine business, covering the building and equipping of complete cable roads, hydraulic machinery, machine tools, and in fact any class of work which would be brought to us.

Q. How extensively do your duties require you to be familiar with various mechanisms of different kinds of machines and construction and repair and operation?

A. I take complete charge of the company's draughting-room, and nearly all the machinery is made directly under my supervision.

It would only be some very small thing that would not be worth while to bring to my knowledge.

Q. Do you consider yourself a skilled mechanic?

A. I do.

Q. From your knowledge as you have testified to it here, and your experience, do you consider yourself qualified to testify as an expert in this case, or any similar case?

A. I do.

146 Q. Have you ever been in the employ of the defendant company?

A. No, sir.

Q. You have no interest whatever in the result of this case?

A. No, sir.

Q. Have you seen or examined what is called the Brill patent in this case?

A. I have.

Q. Are you familiar with the device that is described in that patent?

A. I am from the reading of the patent.

Q. Have you seen the plaintiff's model put in evidence in this case as Exhibit 2?

A. I have examined it and believe it to be the same as the drawing in the patent.

Q. Please state what elements or devices you find in that patent.

A. I find a fly-wheel, a built-up crank shaft, and two, what I have heard called in this case, point centres, which are really two set-screws, with their ends turned conical. I also find that one screw is held or supported by one of the legs and the other by a bracket running from the table downwards, to the centre of the crank shaft.

Q. The elements you have described, you say, you find in the plaintiff's model No. 2?

A. Yes, sir.

Q. Did you mention the standard?

A. Yes, sir, the standard I called the leg, I believe.

Q. Please examine the diagram on the board behind you; have you seen the Dewey patent from which that drawing has been made?

A. I have.

Q. Are you familiar with it?

A. Yes, sir.

Q. And familiar with the drawing on the board?

A. Yes, sir.

Q. State what elements are contained in that drawing of the device claimed in the Dewey patent.

A. I find a solid forged crank shaft, two bearing screws with their ends turned conical, a fly-wheel, a rope pulley or what we call a sheave, and in the hub of this sheave is the arrangement which is the special feature of the patent.

Q. What is that?

A. What they call a brake device.

Q. Have you now mentioned all the elements in the device?

A. There are two supports which hold the adjusting screws; I believe that is all.

Q. For what purpose is that mechanism drawn upon the blackboard claimed in the Dewey patent?

A. It is claimed for driving a sewing machine, and also having a special feature to prevent the sewing machine from running backwards.

Q. What is that special feature?

A. It is this part of the mechanism on each side of the crank shaft, this line here, representing the upper side of the crank shaft, and this line below the lower side of the crank shaft.

Q. Please read to the jury the claim of the patent.

147 A. "I claim as new and desire to secure by letters patent the spring D, applied to shaft B"—this is shaft B—"either with or without the hubbed pulley A-E." This is the pulley A E, or in other words is the pulley E, and in another place he shows it in a little different form, and calls it A. The claim goes on and says: "substantially as shown and used, all arranged to operate in the manner substantially as and for the purpose set forth."

Mr. KALLOCH:

Q. The patent calls for a sewing-machine brake, does it not?

A. Yes, sir.

Q. Are you familiar with the old form of sewing-machine devices, where the bearing of the shaft was upon one side only of the wheel?

A. No; I never made a particular study of it until I was called up in this suit.

Q. You have seen those old devices in this suit, have you?

A. Yes, sir.

Q. Will you please see if, upon the diagram upon the board, and in the Dewey device, there are elements which are qualified to take up the lost motion of the mechanism, better than any element in the old machine devices which you have examined?

Mr. SCRIVNER: I object to that. That is not proper comparison.

The COURT: I sustain the objection.

Fifteenth Exception.

To which said ruling of the court, counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Q. What, if any elements in the mechanism drawn upon the diagram on the blackboard, are fitted to take up the lost motion of the machine there drawn?

A. The two adjusting screws which are shown in the support.

Q. What, if any, element in that mechanism are fitted to reduce the friction which would occur, if there were but one bearing?

A. I don't understand that question.

Q. Is there any less friction there, in the design on the blackboard, than there would be if there was a bearing but on one side of the wheel?

Mr. SCRIVNER: That is within the rule about speculation. I object to the question.

The COURT: I think the question is objectionable.

Sixteenth Exception.

To which said ruling of the court counsel for the defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

148 Q. What elements in the diagram upon the board are common to the elements of the model of the plaintiff's devices, which you have seen?

A. The two conical bearing screws, the crank shaft and the fly-wheel.

Q. Is the bracket of the plaintiff's device shown in the diagram, or not?

A. I find a bracket, or a support, or a leg, or whatever you call it. It is shown on the diagram coming from the bottom. I find a support for the screw, only one is hanging and the other is supported from the base.

Q. The one operating in the plaintiff's model, as the other operates in the diagram on the board, to support the shaft?

A. Yes, sir.

Q. And adjustable mechanism at one end of the shaft; is that so?

A. I find adjustable mechanism on each end of the shaft.

Q. I understand you to say that the standard at one end of the shaft operates to support it and the adjustable mechanism, as it does in the plaintiff's model?

A. Both standards support the shaft in the drawing on the board, the same as the leg and the bracket here go to support the shaft.

Q. The same as the leg and the bracket in the plaintiff's model support the shaft?

A. Yes, sir.

Q. As a practical mechanic, can you tell the jury what the purpose of making that drawing, as it is on the board, was in the designer's mind? I ask the question, inasmuch as it does not show a complete sewing machine. It does not show the top, and the top of the fly-wheel is some distance above the standards which support the shaft and the adjustable mechanism?

Mr. SCRIVNER: I object to that as irrelevant and immaterial.

Mr. KALLOCH: I will add to that question that the witness may answer it after his investigation of the patent.

The COURT: The objection is sustained.

Seventeenth Exception.

To which said ruling of the court counsel for the defendant then and there duly excepted, and tendered this, *i*is bill of exceptions, to the court, to sign and seal, and the court did thereupon sign and seal the same.

Q. Mr. Bell, as a practical mechanic, in your opinion, if the device shown upon the backboard as the Dewey device was before you, would it require any invention on your part, or any exercise of the inventive faculty, to construct such a device as is shown in the plaintiff's model, Exhibit No. 2?

A. No, sir.

Q. Is it your opinion, or is it not, that any skilled mechanic could construct the plaintiff's device, as shown in the model, after having seen the diagram on the blackboard?

A. A man would not even have to be skilled.

149 Q. Any ordinary mechanic, without skill, could do it?

A. Yes, sir.

Q. Are you a practical draughtsman?

A. Yes, sir.

Q. Can you draw upon that blackboard a complete sewing machine, or a sewing machine with the top and standard, embodying such a device as is illustrated by the diagram on the blackboard, without the stopping mechanism, and showing the jury how it could be successfully applied to a sewing machine?

A. I can.

Mr. SCRIVNER: I object to that. No, I will withdraw the objection.

Mr. KALLOCH: I would like to have the witness make a diagram of that kind during the noon recess, on the blackboard, for the sake of showing the jury that that mechanism can be applied to a sewing machine complete, and from the diagram itself, without any consultation, or any regard to the plaintiff's device at all.

The COURT: During the recess you can draw any device you wish, and the court will rule upon it when it is there.

Q. Have you placed any diagram on the board during the noon recess?

A. Yes, sir, I have.

Q. Is that of the Dewey patent, which was there in the morning, still on the board?

A. All but one of the supports, the right-hand support.

Q. Has anything been taken from the support?

A. The support which held it has been changed in form.

Q. What change have you made in the support of the bearings?

A. I have made a diverging in the bearings into two supports, in the form of a brace, which is fastened to each leg of the sewing machine, and laid upon the wood, if necessary.

Q. What do you mean when you speak of the brace?

A. I mean that portion of the machine which runs diagonally between the legs of the sewing machine.

Q. What other change did you make?
A. None whatever. I only changed the shape of the standard.

Mr. WHEATON:

Q. Does the diagram which you have placed upon the blackboard represent a sewing-machine frame, top, legs, brace and treadle, with its upper mechanism placed around the shaft, the fly-wheel, and the other elements complete of the device represented in the Dewey patent?
A. It represents a complete sewing machine run on the Dewey patent.
Q. Did it require the exercise of inventive genius upon your part to make that change in the diagram on that board?

Mr. SCRIVNER: I object to that as irrelevant.
The COURT: I will rule the question out.

Eighteenth Exception.

To which said ruling of the court counsel for the defendant then and there duly excepted, and tendered this, its bill of
150 exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Q. You have shown in that diagram the stop device of the Dewey patent, which you have testified was the peculiar feature of that patent?
A. Yes, sir.
Q. Will you be kind enough to erase that stop device in the Dewey patent on the board?

(The witness does so.)

Q. There now appears upon the diagram all the elements of the Dewey device, except that stop device?
A. Yes, sir. I would wish to state here that I believe you asked me if I had made any other change upon the drawing on the board. I did make a change showing a groove in the fly-wheel which you see in the diagram, so that the rope can be run by the fly-wheel, which, I believe, is in all the sewing machines fixed that way.
Q. Does the device now shown upon the blackboard, containing the elements of the Dewey device, less the stop portion, and containing the brace, top, sides, legs, pedal, and the upper mechanism of the sewing machine, contain all the elements in combination of the plaintiff's device?

Mr. SCRIVNER: We object to that on the ground that it is irrelevant, immaterial and incompetent.
The COURT: The objection is sustained.

Nineteenth Exception.

To which said ruling of the court counsel for the defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Q. Does the diagram you have made upon the blackboard exhibit or show a complete sewing machine, with the devices of the Dewey patent attached to it, less its stopping device?

A. It does, with the exception of the rope, which would be necessary to drive from the fly-wheel to the upper mechanism, amd this connecting rod and the treadle shaft. Those I left out. It will only complicate the drawing. Apart from that it is a complete sewing machine.

Q. Will you please state if the machine, constructed according to the diagram you have on the board, would contain a fly-wheel?

A. It would.

Q. You say you have examined the Dewey patent?

A. Yes, sir.

Q. Have you that patent in your hand?

A. I have.

Q. Do you find described in the drawing of that patent a fly-wheel?

A. I see them on the drawing.

Q. Do you find it described in the patent?

A. Yes, sir.

Q. Do you also find in the Dewey device an arm, such as is described as arm E in the plaintiff's device?

151 A. I find the same mechanical equivalent that is called in mechanics a crank pin.

Q. Do you find in the Dewey device a bracket to which the shaft is attached?

A. I do.

Q. What is it in the Dewey device?

A. It is a support, one at each end of the shaft. There are supports shown.

Q. Do you find the standard that is described as standard H in plaintiff's device?

A. I do.

Q. Do you find screws described as F and G in plaintiff's device? Do you find them in the Dewey device?

A. I do.

Q. Do you find in the plaintiff's device all the elements contained in the Dewey device?

A. I do.

Q. Do you find in the Dewey device all the elements contained in the plaintiff's device, in combination?

A. I do.

Q. I mean to ask you if you find all the elements in the Dewey device covered by and mentioned in the first claim of the plaintiff's patent?

A. I do.

Q. This Dewey patent was issued in 1866, was it not?

A. Yes, sir.

Q. You say that it would require no exercise of the inventive talent to apply that combination of elements in the Dewey machine or device, as they are applied in combination in plaintiff's device?

A. No, sir, it would not require inventive genius.

Q. Would the combination, as it appeared in the Dewey device, suggest to any intelligent and skillful mechanic the arrangement in the plaintiff's device?

A. It would to me or any man familiar with mechanics.

Mr. SCRIVNER:

Q. How large an experience have you had with mechanics? Whom have you been employed by?

A. I was chief designer on the cable road in Oakland and the machinery on that road cost $100,000. I think that piece of mechanics speaks for itself.

Mr. KALLOCH:

Q. Are you competent to testify as to what a skillful mechanic is?

A. Yes, sir.

Q. Would a mechanic be considered ordinarily skillful by other mechanics, who could not apply the combination of devices in the Dewey devices as they are in combination in the plaintiff's device, upon having them suggested to him either by the Dewey machine or a diagram?

A. If I had a draughtsman in my employ and gave him the Dewey patent, and told him to put it in a sewing machine, and he couldn't have taken them and done what I have done in this case, I wouldn't have any further use for him.

Q. In other words he wouldn't be a skillful mechanic?

A. No, sir, he would not.

Q. Would it require the exercise of the inventive faculty
152 to shorten the crank shaft shown in the Dewey device, so that it should be of the same length as the crank shaft of the plaintiff's device?

A. It would not take any inventive genius, and what is more, no two men would take the same length of shaft, and no one man would take the same length of shaft two days running. I know from experience; I have begun to make a drawing and put that aside and started in to draw it again, perhaps a month hence; although the principle may have been the same, the proportion of the drawing might be altogether different. There is no rule as to the length of the crank shaft. The convenience and construction of the machine would regulate its length entirely.

Q. Regardless of the length of the crank shaft in the Dewey patent, are the operations of the Dewey device the same identically in principle as the operation of the plaintiff's device?

A. Yes, sir, exactly the same.

Q. Have you seen and examined Exhibit 3 in this case, representing one of the defendant's machines?

A. I have seen it, but not examined it yet.

Q. Will you please examine the crank shaft of that machine?

A. I understand the crank shaft.

Q. How are the bearings of that crank shaft arranged?

A. They are conical bearings on the end of the crank shaft, convex to the crank shaft.

Q. Is there any mechanism there for taking up the lost motion?

A. There is.

Q. Please describe it to the jury.

A. On the brace there is a small lug with bearing point in it to feed the end of the crank shaft. This lug or bearing, being fastened to the bracket of the sewing machine by means of screws, the screw fitting into a slide-hole in this bearing. The screw can be loosened as the machine wears, and a bearing pushed up.

Q. How do you loosen that screw?

A. By means of a crank.

Q. How do you push up the crank shaft, after you loosen the screw?

A. There are so many ways; you can tip the lug slightly, so it would slip towards the fly-wheel.

Q. Then you would tip it, in order to get it up in that way?

A. Either tip it or push it.

Q. With your hand?

A. Yes, sir.

Q. Is there any mechanism or contrivance about the screw you have mentioned, that has to be tightened with a monkey-wrench about the lug, which will enable the lost motion to be taken up, without the use of any other implement other than the hand?

A. No, sir.

Q. What is a lug as it appears upon that machine?

153 A. In this case it would hardly be called a lug, technically termed in mechanics, because it is not cast solid on the brace. In this instance it is a slide, mechanically speaking, so it could be loosened to take up the lost motion.

Q. Please examine the model of the plaintiff's device for a moment. What do you find for a bearing there?

A. I find two set-screws, with their ends conical and fitting into the receptacles of the crank shaft to receive them.

Q. Are the bearings and devices of the shaft in the plaintiff's device capable of operation, taking the bearing devices of Exhibit 3, or incapable?

A. They are.

Q. In what respect?

A. The difference is more theoretical than practical for this case.

Q. What do you mean by "for this case"?

A. Because in this case, they do not need the accurate adjustment which this patent will permit. It is a question whether a man would ever have their advantages if he adjusted for a number of years, if he had adjusted on this side, or on this mechanism.

Q. That fundamental difference is there?

A. Yes, sir.

Q. It is owing to a difference in the construction of the bearing devices?

A. Yes, sir, one of the bearings on this Exhibit 3 are solid on the leg or support.

Q. I show you the upper works of the Florence sewing machine, which has been used in illustration heretofore, before the jury, containing the needle bar and the needle bearing, and the conical ends at each end of the shaft, and ask you if the purposes for which those bearings are used, are to guide that needle bar through the needle shaft, whether that can be adjusted with a bearing at one end of the shaft, with a movable bar only at one end of the shaft, and adjusted. You find in that mechanism the needle bar of the sewing machine, and the needle-bar shaft, adjustable bearing of the shaft, and the sewing-machine needle?

A. Yes, sir.

Q. Please state if it requires any delicate adjustment of that mechanism to guide the needle in the course in which it is designed to act in the machine.

A. It does.

Q. Could that result be achieved by the use of an adjustable bearing upon one end of the needle bar only?

A. It could not.

Q. That same difference exists between the plaintiff's device and the defendant's machine, does it not?

A. It does.

Q. In the plaintiff's device the shaft can be moved either way, by the bearing screws, can it not?

A. Yes, sir.

Q. How is it in the defendant's machine?

A. It cannot. It has to follow in one direction all the time.

Q. It can be moved only one way?

A. Yes, sir.

Q. Then you have explained the mechanism and the fundamental difference in the plaintiff's device from the defendant's device?

A. Yes, sir.

154 Q. One of the adjustable bearings is left out of the defendant's machine?

A. Out of Exhibit 3.

Q. Nothing is put there to replace it, is there?

A. No adjustable bearing put there.

Q. No adjustable bearing to replace it?

A. No, sir.

Q. Please examine Plaintiff's Exhibit 5, and state if the same difference as to bearings, and the movements of the shaft which you have examined, exist between plaintiff's device and Exhibit 5?

A. The operation of the two crank shafts is the same exactly, only the adjustment is *vice versa*.

Q. The shaft of Exhibit 5 is susceptible of being moved in only one direction?

A. Yes, sir, that is all.

Q. In that respect it is like the shaft in Exhibit 3?

A. Yes, sir, that is all.

Q. What do you understand by the word crank, as applied to mechanics?

A. Any mechanism which transmits motion into a revolving or reciprocal motion.

Q. State the name of a simple form of crank in your knowledge.

A. What we call the solid forge or cut-throat crank.

Q. Make a diagram of that large enough to be seen, please.

A. That is one, that is a solid forge or cut-throat.

Q. Suppose the entire shaft to be twelve inches from end to end, and the straight portion to be 4 inches in length, then what would the groove portion be, what part of the device?

A. That is what we call the cheeks of the crank.

Q You say in a great many cases we might make it this way?

A. In a crank of an engine, say 10 or 15 horse-power, we would forge that crank solid, and then take and cut that out of solid metal and turn it up, and that would be made square, these sides (indicating) would be made flat, this part here (indicating) be turned around here at the end of the crank pin. This would be a crank in the way it is shown, and would be made out of one solid piece, and this would be forged by a blacksmith. This point and this point are called the cheeks of the crank.

Q. If you take a straight piece of iron and make a loop in the middle, the straight portion cut off on the line, even with the bottom of that straight portion, would be the shaft proper?

A. Yes, sir, that would usually be better, if we make what is called a built-up crank. In marine engineering they use that more in that class. We first take a shaft like that, it is too heavy to forge, some are perhaps 16 or 24 inches in diameter. We then round that, and we shrink it first under hydraulic pressure and then in this end, so it is a big machine; and a double crank comes inside, the same as this does. That (indicating) represents the cir-
155 cular shaft. This (indicating) is the shaft; that is the crank, the cheeks of the crank, then they set in here, and that is the crank pin; that is what we call a built-up crank.

Q. Show what portion of that constitutes the crank.

A. The part that surrounds the shaft, this part from the lower part of the shaft and surrounding the crank pin (indicating), and now we have a built-up crank, the hub of the crank cheek is part of the crank also.

Q. Look at the other form of that crank, would it be made like this?

A. There would be where the shaft is inserted, here is where the pin would be inserted, the crank pin, or what they call arm E, I think, in the other patents; this is the shaft (indicating), that and that (indicating) is the crank, and also the same on this side holds good; this is the pin.

Q. In each one of those diagrams the long horizontal portion is a shaft?

A. Yes, sir, there is another sort of a shaft that is used in stationary work, for stationary engines; there is another crank (indicating), then again we find where this is a circular disc, and we make it into a circular disc and it looks better.

Q. What difference does it make whether one of those shafts is a foot, or two feet long, or an inch long?

A. It doesn't make any difference.

Q. I hand you now a copy of letters patent issued to Henry C. Smith, No. 120,401, dated October 31, 1871. Please examine that.

Mr. SCRIVNER: You offer that in anticipation.

Mr. KALLOCH: Yes.

The WITNESS: I have examined this patent.

Q. For what is it?

A. It is a mechanism for driving sewing machines.

Q. Will you state what elements you find in that device?

A. I find a crank shaft, a crank pin, crank, fly-wheel, also, and two supports for carrying the shaft.

Q. Do you find in that device the elements of the plaintiff's device in that machine described there? Do you find the elements of the plaintiff's device, all of them, as they are described in the plaintiff's device or not?

A. I find all but the adjustable screws.

Q. All the elements described in the plaintiff's patent except the adjustable screws?

A. Yes, sir.

Q. Do you find the bracket he claims?

A. This Smith patent has a bracket about the same as in the plaintiff's patent.

Q. How does it compare in the Smith patent with the position and operation it is designed to have in the plaintiff's patent?

A. The bracket itself looks exactly the same in the two drawings, in the drawing of the Smith patent and the Brill patent.

Q. Excepting as to the adjustable screws without bearings
156 you find the elements of the plaintiff's device in the Smith machine?

A. Yes, sir.

Q. What are the bearings of the Smith machine?

A. They do not show the construction, but it looks to be the ordinary shaft passing through the journal. They are not adjustable bearings,

(The said patent was here introduced in evidence, marked Defendant's Exhibit 8, and the following is a copy thereof, to wit:)

"DEFENDANT'S EXHIBIT 8."

120,401.

UNITED STATES PATENT OFFICE.

HENRY C. SMITH, of Cleveland, Ohio.

Improvement in Treadles for Sewing Machines.

Specification forming part of Letters Patent No. 120,401, dated October 31, 1871.

To all whom it may concern:

Be it known that I, Henry C. Smith, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and improved sewing-machine treadle, of which the following is a specification:

The nature of this invention relates to a combination and arrangement of a bent oscillating lever situated between the foot treadles, and supported by a standard, and is connected with each of the foot treadles so that in the alternate motion the one treadle throws up the other.

(Here follows diagram marked p. 156*a*.)

In the drawing, figure 1 is a front view of a sewing-machine table having my treadle attached. Fig. 2 is an end view of the table with leg removed. Fig. 3 is a top or plan view of my improved treadle. Fig. 4 is a detached view of the oscillating lever and its supports.

A is a table top, depending from which is a bracket, B, which supports the shaft of the driving wheel. To the rod C, stretched across the lower part of the table, I attach two levers, D D, pivoting them so that they may have motion, the right hand one extending forward a little beyond the other, and having a socket, *d*, to which is attached a pitman, E, connecting it with the crank on the shaft above. Between the levers D D, and attached to the rod C, are supports F F′, the first one F slipping into the second F′, and are locked together by the rod C. In the support F′ is arranged a bent oscillating lever, G, pivoted at *g*. The forward end of the lever G is connected by a link, *h*, to the front end of the left-hand lever D, and the rear end is connected to a short arm on the right-hand lever D by a link, *i*. The forward end of the lever G is made
157 longer than the rear end, so that the power shall be equal to resistance necessary to be overcome in the raising of the opposite lever D. By this construction there is equal compensation given to either of the treadles D D. A slot, *j*, is made in the levers D D, for the purpose of attaching slippers or foot pads K K, which may be adjusted back and forth, as may be desired, by means of a set-screw on the under side. The foot levers D D may be constructed in the form of the foot pads K K and the loose or adjustable ones dispensed with, if desired.

H. C. SMITH.

Improvement in Treadle for Sewing Machines.

No. 120,401. Patented Oct. 31, 1871.

No. 955 Singer Mfg Co } to 156 Q
Brill

Fig. 1.

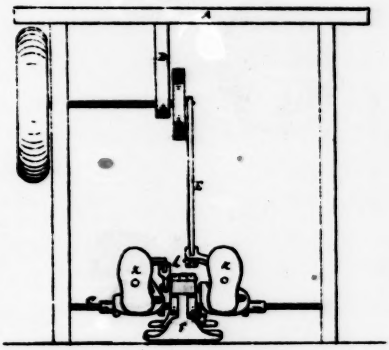


Fig. 2.

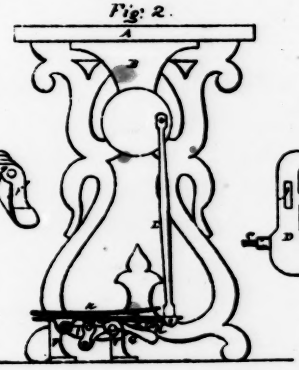
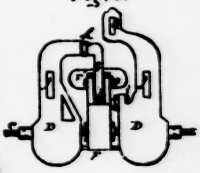


Fig. 4.

Fig. 3.



WITNESSES.

Geo. W. Gibbs
W. F. Brill

INVENTOR.

H. C. Smith

By this mode of constructing a sewing-machine treadle a very compact, easy-working, and steady reciprocating treadle is obtained. It is not liable to get out of order, and is situated where it will not interfere with any of the other machinery on the table.

I claim—

The foot levers D D, the supports F F′, the oscillating lever G connected by the links *h* and *i* to the levers D D, when the same are constructed, arranged, and combined to operate substantially as described and for the purpose set forth.

H. C. SMITH.

Witnesses:
GEO. W. TIBBITS.
N. S. SWEET. (134.)

Mr. WHEATON:

Q. Please examine the letters patent I now show you, and state what they are.

A. I have examined this patent.

Q. To whom is it issued, and when?

A. It is issued to E. W. Keyes. It is headed "A treadle patent, No. 112,720, dated March 14th, 1871."

Q. Will you compare that machine with the plaintiff's device described in this patent?

A. It has all the elements of the plaintiff's device, except the adjustable bearings.

Q. You are now speaking of the Keyes patent?

A. Yes, sir.

(The said patent was here introduced in evidence, marked Defendant's Exhibit 9, and the following is a copy thereof, to wit:)

"DEFENDANT'S EXHIBIT 9."

UNITED STATES PATENT OFFICE.

EBEN W. KEYES, of Charlestown, Massachusetts.

Improvement in Treadle Motions.

Specification forming part of Letters Patent No. 112,720, dated March 14, 1871.

To all to whom these presents shall come:

Be it known that I, Eben W. Keyes, of Charlestown, in the county of Middlesex and State of Massachusetts, have made an in-
158 vention of a new and useful treadle motion for sewing machines; and do hereby declare the following to be a full, clear and exact description thereof, due reference being had to the accompanying drawing, making part of this specification, and in which—

(Here follows diagram marked p. 157*a*.)

Figure 1 is a side elevation, and Fig. 2 a transverse and vertical section, of a table containing my invention.

The purpose of this invention is to obtain a motion for sewing machines, &c., which shall relieve the feet of the operator from much of the labor now devolving upon them, by permitting the machine to be driven by a swinging motion of the feet and lower legs, in place of an oscillating movement at the ankles, as now practiced, the device which I employ to carry out this purpose also enabling a greatly increased power to be applied to the machine by a less expenditure of strength than at present.

This invention consists in driving the crank of the driving shaft of a sewing machine, or other analogous machine, by means of a swinging or vibratory lever suspended from a pivot disposed above the crank, and with its lower free end extending to, or nearly to, the floor, in front of the operator, such lever being provided with a slot, into which the wrist pin of the crank extends, and by means of such crank is put in motion, the whole being as hereinafter explained.

The drawing accompanying this specification represents a table which may be supposed to belong to a sewing machine, the top of such table being shown at A, and its four legs at *a a a a*.

The balance wheel and driving shaft usually employed in sewing machines are represented respectively at B and C, as mounted in a suitable manner in hangers D E, the crank of such shaft being shown at F. G represents an upright bar or lever disposed alongside the outer face of the crank F, and pivoted at its upper end to a stud or pin H, extending from the hanger D.

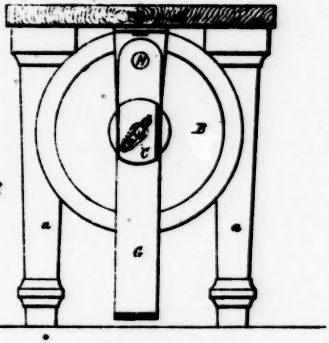
A slot *b* is formed in the lever G, and into this slot the wrist pin *c* of the crank F enters, the length of such slot being slightly in ex-

E. W. Keyes,

Treadle.

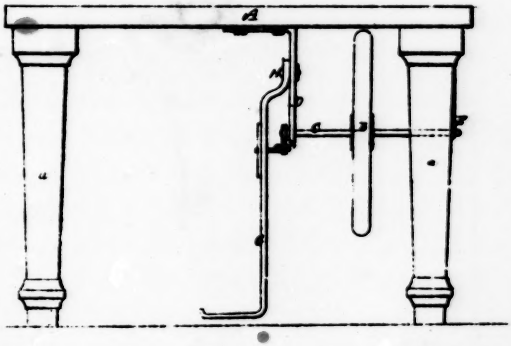
No. 112,720. Patented Mar. 14. 1871.

Fig. 2.



No. 955 Singer Mfg Co. v. Bull } p. 157

Fig. 1.



Witnesses

Chas. C. Tomson

H. Bailey

Edw. W. Keyes

by his attorneys

Baldwin & Curtis

cess of the diameter of the circle described by the revolution of the crank pin.

It will be apparent that reciprocating vibratory motions of the lever G, or treadle, as it may be termed, will impart rotary motion to the driving shaft.

It has been found in practice that the swinging motions of the feet and lower portions of the legs, which are requisite to vibrate the lever G, are attendant with much less fatigue than by the treadle motion now universally in use, and this ease of movement is enhanced by the long leverage of the treadle G.

In order to avoid as much as possible the liability of the crank to stop on a dead centre at the terminus of each vibration of the lever, I dispose the slot *b* at an oblique angle to the longest axis
159 of such lever, by which means a starting power is exerted upon the pin at such time.

Claim.

In combination with the stand or frame and crank shaft, a vibratory treadle lever pivoted at its upper end vertically above the shaft, and provided with a diagonal or oblique slot, in which the crank or wrist pin moves during the vibrations of the treadle, substantially as shown and described.

EBEN W. KEYES.

Witnesses:
FRED. CURTIS.
EDWARD GRIFFITH.

Q. As shown in the plaintiff's patent what particular office do these screws perform? I do not mean the screw points but the screws themselves?

A. They act as the supports for the crank shafts.

Q. Is it the screws that do that, or the screw points?

A. Well, either or all of the screws. It is the end of the screw turned down which turns conically, which acts as a support for the crank shaft.

Q. What is it, as shown in the patent, that moves those conical bearings that are on the end of the screw giving the bearing sockets?

A. It is the screw-thread on the screw end in a corresponding thread in the bearings of the support, it being revolved by this screw; it moves them backwards and forward, at the will of the operator.

Q. Is it possible to move those bearing points up to or away from the particular sockets without using those screw-threads as shown in the patent?

A. No, sir, you have to have the thread there, the thread has to be on the screw, and the corresponding thread in the bearing.

Q. Do the screws shown in the patent have those threads you speak of by which they are moved back and forth?

A. Yes, sir. The drawing clearly shows the thread.

Q. Would it be possible to move those conical bearings that are on the inside ends of the screws towards or away from the conical sockets, by simply pushing them by the hand of man, back and forth?

A. No, sir, it would be impossible.

Q. Is that screw a mechanical device which intervenes between the conical bearings on its ends, and the human hand which is used as the power for moving it back and forth?

A. It is a mechanical element which exists between screw and the bearing which the screw fits in, which has to have a revolving motion to impart lateral motion.

Q. In the defendant's machine No. 3 is there any mechanical device of any nature or kind that can be used effectually be-
160 tween the human hand and the bearing points to move that bearing point back and forth?

A. The first operation that would have to be done, would be to release the clamp described that holds the slide.

Q. My question only relates to the mere movement back and forth?

A. There is none necessary. This slide can be moved in or out without having to impart any motion to it.

Q. I am inquiring if there is anything in the machine itself which is used between the pitman and the bearing points for moving that particular point back and forth?

A. Oh, no.

Q. Then in that machine is there any mechanical device which takes the place of the screw shown in the patent? Is there any mechanical device which enables that screw and that bearing to move back and forth in the defendant's machine?

A. No, sir.

Q. As to that screw, is there any mechanical substitute or mechanical equivalent shown in the patent to be found in the defendant's machine No. 3?

A. No, the slide has to be moved by hand, and not by any mechanical device.

Q. In the defendant's machine No. 5, is there any mechanical device of any nature or kind, at the inside bearing of the Defendant's Exhibit No. 5, which takes the place of the inside screw shown in the patent, as far as that screw is used for moving the bearing points back and forth?

A. No, there is not.

Q. Is there in the machine last mentioned any substitute or mechanical equivalent at the inside end of the crank bearing or crank shaft, whichever it may be, that performs the office of the inside screw, which is shown in the plaintiff's patent?

A. There is none, leaving out the question of the support at the screw ends. There is no element of adjustment.

Q. Then so far as that screw is used in the patent for the purpose of adjustment, is there any mechanical substitute or equivalent for it, either in the defendant's machine No. 3, or at the inside end of the bearing in the defendant's machine Exhibit No. 3?

A. There is none.

Q. Please state whether or not it belongs to the knowledge of every competent mechanical engineer engaged in the manufacture and the application of various kinds of bearings, including anti-friction bearings as well as others, and applied to any new machine, any one of those are well known—those class of bearings.

A. It takes no invention at all.

Q. Why not?

A. The reason is, some bearing must be used. When engineers or mechanics design a piece of work the first thing that comes over his mind is, just the best way to do it, and how to use it in this case. He will use the best part and his best judgment, and he has it all in his mind.

161 Cross-examination.

Mr. SCRIVNER:

Q. What do you understand by bearings? What do you mean by that expression?

A. Any part of a machine which supports some other part.

Q. Then you mean both parts? Does it not take both parts to make a part?

A. Well, it takes both parts.

Q. Isn't that a part by itself, in the plaintiff's exhibit?

A. Only one part, we have the shaft and the part.

Q. You stated the screw of that will be one part, what is the other? Is not the screw only one part of the bearings?

A. It depends possibly whether the screw is fixed, or on the case.

Q. What does that depend upon? Is not the screw only one part of the bearings?

A. The screw in that case is part of it.

Q. The whole of it?

A. No, the conical bearing.

Q. The conical bearing of that screw makes the bearing?

A. If you take this bearing out, where is the bearing? If you take out the wheel, where is the bearing? That part upon which the shaft revolves is what I mean by the bearing. In this case it takes two things to make the bearing, the screw, the bearing and receptacle, and the difference have been made there accordingly.

Q. Without the arm of the crank here, the point of contact between the screw and the crank, will there be a bearing?

A. They do not bear against each other.

Q. The end of the screw is a bearing?

A. If it is made for a bearing, it is.

Q. I hand you a screw with a conical point on it, and I ask you if by itself there is any bearing, as the word is known in mechanics?

A. I say that such a fine point exists there, that where the one exists and the other ends, that no one can say where the bearing com-

mences and where the bearing ends. The way to answer that question is the way that I have already answered it.

Q. In mechanics the word bearing has a specific meaning?

A. Yes, sir.

Q. Look at your drawing there, what do you mean by the bearings?

A. I mean in this case—I mean the end of the screw—entering to the end of that screw.

Q. Do you mean when you use the word bearing, the point of contact between the two things?

A. If it is used as an arm, yes, sir; if it is used as the name of an instrument, it is not. There is a point of contact, one is here and the other is a shaft. You could not have a bearing without the two things coming together.

Q. Will you describe to me now how you will get a bear-
162 ing in mechanics, as the term is used, without two things coming together.

A. No, sir, of course I can't.

Q. Is there any reason in Exhibit 3 why the point of contact, or in other words the bearing, should be moved back and forwards, as Mr. Wheaton was doing a little while ago?

A. In my direct testimony I said, in this case the element of fine adjustment was not necessary; still if it was necessary that element does not exist in this, as it does in the Brill patent.

Q. Does the Brill patent anywhere say anything about moving the bearings backwards and forwards?

A. Not to my knowledge.

Q. If that can be done there is one advantage that it possesses over Exhibit No. 3?

A. Yes, sir.

Q. The question is whether you see anything in that patent about moving the bearings backwards and forwards.

A. That is to say, I do not see any special mention, or any mention whatever of the moving the two bearings backwards and forwards.

Q. How would you go to work to move those two bearings backwards and forwards to move the point of contact between the two feeders of it?

A. If I wanted to move this fly-wheel to this side, or to my right, I would loosen the right-hand screw and tighten up the left-hand screw, and *vice versa* if I wanted to move the fly-wheel in the opposite direction.

Q. Could you determine any purpose why in a sewing machine the patentee, or anybody else, would want to do that thing?

A. Yes, sir.

Q. Why?

A. In the manufacture of this machine, it would be a very essential thing. I know we have manufactured machines, and in setting up this machine, they may then have the adjustment, the setting one screw or the other over to bring its wheel exactly.

Q. Exactly to what?

A. Exactly to the shaft which is on the upper mechanism of the sewing-machine table. If that was done, I don't think myself that it would be necessary to adjust it on both sides.

Q. You find here a device for taking up lost motion in the plaintiff's machine?

A. Yes, sir.

Q. Also in the defendant's machine?

A. Yes, sir.

Q. When lost motion is taken up, it will run just as true and smooth as if it was taken up in the plaintiff's device?

A. I presume it would.

Q. Then, so far as the purpose of the patented device is concerned, as described in the patent, you find that the defendant's machine, as shown in the exhibits, will accomplish those purposes?

A. No. I say that condition of fine adjustment is not in this, yet there is in that, but still it is a question I am not prepared to answer whether it is essential.

163 Q. Take that patent and look at it, and tell me what object set forth in the patent, the defendant's machine will not accomplish.

A. It will not accomplish the moving of the belt fly-wheel backwards and forwards, if that becomes necessary.

Q. Do you find anything in the plaintiff's patent about moving the bearings backward and forwards being necessary?

A. I find here, "The object of my invention is to increase the ease of operating the machine, diminish the noise, and provide a means of readily adjusting the bearings of the driving or fly wheel."

Q. Do you find in the defendant's machine, Exhibit 3 and 5, devices for increasing the ease of operating the machine?

A. I do.

Q. Do you find a device to diminish the noise of the machine?

A. I do.

Q. Do you find a device provided or means provided for readily adjusting the bearings of the driving wheel?

A. That is where I do not see the same mechanism.

Q. Do you find in the defendant's machine, models 3 and 5, means for adjusting the fly-wheel?

A. I do find means for adjusting the fly-wheels, but not of the bearings of the fly-wheel, which this claim particularly speaks of.

Q. Coming down to this part of the wheel, if that gets loose, and you want to adjust it, you have to do so, because the bearings are worn?

A. Yes, sir.

Q. Now, these bearings in the defendant's machine, when they get loose, you want to adjust them?

A. Yes, sir.

Q. You have no means for taking it up and adjusting it?

A. Yes, sir.

Q. You seem to be an expert on cranks. If you cut that shaft off where you made the crank, what have you got left?

A. Two shafts.

Q. Is there anything in mechanics known as a crank?

A. Yes, sir.

Q. Is there anything known as a crank shaft, as contradistinguished from a crank?

A. No.

Q. Then, when you use the word crank, you mean crank shaft?

A. It depends altogether on how the word is used. In this case, from what the man said, inference would be taken, and you would have to confine yourself to the exact part of the machine. If I was in a machine shop, it would mean a whole crank shaft and disc and everything.

Q. Then, when you use the word crank, you mean crank shaft?

A. Not on the witness stand.

Q. What do you mean upon the witness stand?

A. If I was giving orders to one of my men outside, he would bring along the disc and the crank, and everything along.

164 Q. Is there anything in mechanics known as a crank as contradistinguished from a crank shaft?

A. Yes, sir.

Q. What is it?

A. That part of that drawing, from there to there, if it could be separated, would be a crank. In this drawing, that part from there to there, would be a crank, and also in this one, the hub coming down, to form the cheek of this crank, would be the crank.

Q. In mechanics, is there anything known as a crank used for practical purposes, as a piece of machinery? I mean as contradistinguished from a crank shaft.

A. Yes, sir.

Q. It would be that piece?

A. In that particular case, it would not be one in a thousand times you would be called upon to call that a crank. If you were making it larger, and making it for marine work, you would call this part the crank.

Q. What do you call that?

A. I would call it a crank shaft, or a bent crank shaft.

Q. How much of that is the crank?

A. The part between the crank pin and the shaft would be the crank.

Q. Suppose you cut it right off there, what have you got left, square? Have you got a crank left for practical uses?

A. It would never occur under these conditions, but if you want to take it technically, we have a crank just as much as we had before.

Q. I want you to mark on this paper what you consider the crank portion of that drawing.

A. This is a small piece of paper and I can hardly show it. I will say that can be demonstrated much better on the blackboard than any other way.

Q. I want you to mark it on the paper.

A. That portion just across section is the crank, take either that or this.

Q. Is it not a fact that this part here is simply the end of the crank?

A. No, sir, it is the shaft.

Q. What is your age?

A. 29.

Q. Where were you raised?

A. In California, San Francisco, since I was six years old.

Q. Where were you educated?

A. In San Francisco.

Q. At the public schools?

A. Partly public schools, and partly at Mr. George Bates' school, who has now a preparatory school for the university.

Q. Where did you study mechanics?

A. With the San Francisco Tool Company.

Q. When did you commence to study mechanics with them?

A. Ten years ago.

Q. How long did you study mechanics with them?

A. I have studied mechanics all my life.

Q. You have been in the employ of that company all the time?

A. Yes, sir.

165 Q. What branch of mechanics did you study?

A. Well, it is rather hard to hold myself down to any particular branch, hydraulic machinery and steam machinery is one of our specialties, machinery tools are also a specialty with us. We have also done considerable in can-making machinery and then other general work which would take too long to describe; in fact, I can't think of all the different classes of work that I have worked on.

Q. You are engaged in the manufacture of tools?

A. That was our specialty, when the company was first started, but we found that the competition from the East was so great, that we drew out of it.

Q. Did you ever make a study of the subject of mathematical drawing?

A. Yes, sir, at the San Francisco tool works. I served an apprenticeship there as draughtsman.

Q. Have you ever had anything to do with sewing machines prior to this case?

A. Not particularly.

Q. Did your company ever have anything to do with the manufacture or repairing of sewing machines?

A. No, sir.

Q. When was your attention first called to the subject of sewing machines, how they were constructed and how they were operated?

A. I had a general idea of how they were operated for years. My mechanical knowledge gave me the general idea.

Q. How did you get it?

A. From my association with mechanics; I mean mechanics as a study.

Q. You have been studying it as a science, while in the employ of this company?

A. Yes, sir.

Q. What particular duties do you perform there at this time?

A. I am in charge of all construction, and in charge of all designing of all the construction.

Q. What piece of work was that you testified to yesterday, you claimed to have made the drawings of?

A. The machinery for the Piedmont Cable Company.

Q. You do not pretend you made any new discoveries or inventions in connection with that matter?

A. Well, comparing them with the invention here, I made a great many.

Q. Do you claim you made any invention at all, with relation to that matter?

A. Yes, sir.

Q. In making your drawings, did you have anything before you for that work?

A. The part which we did not intend to patent, we had precedents for.

Q. Turning to the drawings there on the blackboard, do you see any difference between the drawing you made yesterday and the one below it?

A. There is a difference in all the parts except the shaft.

Q. Do you find any brace in the lower drawing?

A. No, sir.

Q. Did you ever see a sewing machine which had a brace
166 in it such as you have drawn in the large drawing?

A. I don't know whether I have or not.

Q. Will you look at the braces in Plaintiff's Exhibit- 3 and 5, and state if they are like the brace you have made?

A. No, but there are no two alike.

Q. Suppose that there had never been a brace put into a sewing machine, where would you have gotten the idea of putting that sort, or any sort of a brace in there?

A. Out of my head.

Q. When you were making that drawing, why did you put a brace down there?

A. Because sewing machines have braces.

Q. Why, when you were making this drawing, did you not simply draw the plaintiff's bracket down here?

A. I can't say now why I didn't do it. I thought I was to show the similarity of this to the defendant's machine.

Q. You have studied this subject under the supervision of the defendant's counsel in this case, have you not?

A. No, sir.

Q. Have you talked with them about making the drawing in this case before you made it?

A. Yes, sir.

Q. When?

A. I think it was last week.

Q. Before you made the drawing, you had examined carefully the plaintiff's patent and the drawing connected with it?

A. Yes, sir.

Q. You had been informed about the existence of braces and shown sewing machines with braces?

A. I have seen a brace in them now for a number of years.

Q. You knew that a number of these braces were in machines?

A. Yes, sir.

Q. Just draw a line down there representing the plaintiff's brace relative to where it would be with a view of the drawings and the patent.

A. It would be enclosed in those lines.

Q. If you had drawn the brace down there, you would have left the crank out of your drawing?

A. Yes, sir, I would shorten up the crank.

Q. Would there be any benefit result in the operation of a sewing machine by shortening up the shaft, and bringing the crank close to the fly-wheel?

A. There would be no benefit in the operation.

Q. Would there be any beneficial result as applied to sewing machines, in shortening the shaft, and bringing the crank shaft close to the wheel?

A. No, sir.

Q. Would there be any saving in material?

A. There would.

Q. Would there be any saving in weight?

A. There would.

Q. Would there be any saving of power to operate it? Would it not be heavier if you had a brace instead of this point and
167 this point, if it was shortened up to the crank?

A. Theoretically, it would, but otherwise I doubt if it would in practice. There is no man living that can tell or make the assertion as I heard made on this witness stand—can tell how much power.

Q. Did you hear any witness on the stand say how much power it took?

A. I heard a witness say it took one-half less.

Q. Did you hear any witness testify to that? You heard a witness give his opinion, to the effect that if you brought the crank close up to the wheel, it would take one-half less power than if it was a shaft like this.

A. That is not the way I understood it.

Q. In your judgment would there be any saving of power by bringing that crank close up to the wheel and bringing the wheel close up to the standard?

A. Theoretically it would.

Q. Take your rule and measure one of these machines. I believe they are all the same size, I don't care which one, Exhibit 3 will do, measure from standard to standard first.

A. That is 19 inches.

Q. From the standard to what is called the lug in Exhibit 3?

A. About five and a half inches.

Q. From the base to the top?

A. 28 inches.

Q. How does the point where the pitman is fixed to the crank—what relation does it bear to the wheel of the sewing machine and the needle; is it not on a line with the wheel above?

A. Yes, sir.

Q. In relation to the wheel, where is the treadle?

A. Approximately in the centre of it.

Q. Now, measure your drawing from standard to standard.

A. I will say this drawing was not intended for a scale drawing. It is 44 inches between and it is 34 inches high.

Q. From the standard to your brace?

A. About 21 inches, but this treadle is to one side, but the proportion of this would be nearly one-half of this, if the man had laid out the first shaft made in the sewing machine, he has made it twice as large.

Q. If that represents a sewing machine, how big would it be, according to that drawing?

A. If you had that drawing to construct a sewing machine, how big would it be? If I was to make it exactly according to that drawing?

Q. Yes.

A. It would be about 46 inches.

Q. Did you ever see a sewing machine so large as that?

A. No, nor a shaft so large either.

Q. Look at the Dewey patent, the specifications, and state without the drawings—try for one minute to forget that there are any drawings at all in that patent—tell me if you find anything in the specifications in language or figures that would suggest even the drawing you have made on the board.

168 Mr. WHEATON: We object to that question as immaterial, irrelevant and incompetent. It is not fair to the witness.

The COURT: The objection is overruled. Answer the question.

Twentieth Exception.

To which said ruling of the court counsel for the defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Mr. SCRIVNER: I would like an answer. I ask you as an expert to answer my question, whether from the written and printed words in that specification, there is anything there to suggest even the drawing you have made on the blackboard?

A. Yes, sir.

Q. What is it?

A. This invention relates to new stop machines and so on.

Q. Is there anything more?

A. I do not find any other mention of the subject in the specifications, but I find sewing-machine brake written on the other page.

Q. Do you find anything in the sewing-machine brake that would

suggest any of these drawings other than the braking device you have rubbed off here? In the whole sewing-machine brake, you would simply get this idea?

A. Yes, sir, but I know that must be classed with a sewing machine.

Q. But there is nothing to indicate how it is constructed?

A. No, sir.

Q. Now, then, read that portion over again, that you say would suggest this.

A. "This invention relates to a new stop device for sewing machines," and so on in the same direction.

Q. Reading what you have just read from the Dewey patent from the clause alone, suppose there was no drawing, and you had not seen any drawing of the device shown in the patent, would the reading of that alone suggest to you such a drawing as you have put on the blackboard, the large drawing?

A. It would.

Q. Would it suggest to you such a drawing as put in the patent, if you had never seen it at all, just the reading of that? Would it suggest the drawing that the patentee has made a part of his patent?

A. It would suggest something similar. No two men would make the same drawing from the same description.

Q. Do you pretend to say, if you only read the clause you have read to the jury, without having seen any drawings at all, that from that clause alone, you would have drawn something similar to the drawings in the patent, or what you have made up here?

A. Do you mean from the specifications without the drawings?

169 Q. Yes, the specifications alone?

A. I think I would.

Q. How did you come to make the large drawing on the board in that shape? What influenced you to make it in that shape?

A. To show its similarity with the defendant's machine.

Q. You made this drawing to show a similarity between the Dewey patent and the defendant's machine?

A. Yes, sir.

Q. You did not make it to show any similarity between that and the plaintiff's machine, did you?

A. Yes, sir, because I think the two are so nearly alike, you cannot distinguish the difference.

Q. So nearly alike you cannot distinguish the difference?

A. Yes, sir, in principle.

Q. And in operation?

A. No, sir, one has a feature which the other has not.

Q. The same results are accomplished?

A. No, sir, they are not, only to a certain extent.

Q. Then to a certain extent they are?

A. Yes. There is one difference.

Q. Look at the Dewey patent again and see whether the written words do not require it shall rest upon the ends of the standard—

change that—whether the ends of the crank shaft do not rest upon the upper end of the standard.

A. I do not see anything in the specifications relating to it. If there is, I would like to have it pointed out to me.

Q. The drawings in the patent show that the end of the crank shaft rests upon the end of the standard in the drawing?

A. Yes, sir.

Q. There is nothing in the drawing to indicate there is anything else going above it?

A. There is nothing in a mechanical drawing that can be construed anything that could not be attached or placed on top of that standard.

Q. In making your drawing, the large drawing on the board, did you construct anything above the crank shaft shown in the drawing of the Dewey patent?

A. I extended the supports.

Q. When you started in to make this drawing, you made an entire frame for a sewing machine, did you not? What you intended to represent was the entire frame, standards, bottom and top?

A. Yes, sir.

Q. Then below what you consider the top of the machine you constructed your braces and the other devices shown?

A. Yes, sir.

Q. When you were making this drawing, why did you not run it clear over here, so it could rest upon the standard here, as it was in the model?

A. I could have done so. I thought that showed up the principle of the defendant's and plaintiff's machine the best way.

170 Q. You were trying to show up the principle of the plaintiff's and the defendant's device and not the Dewey machine?

A. I had your own drawing to work from.

Q. You thought putting it in here showed the principle of the plaintiff's and defendant's machines better than by putting it through there?

A. Yes, sir.

Q. Then you were endeavoring to show up the principle of the plaintiff's and defendant's machines, rather than the principle of the Dewey machine?

A. No, sir.

Q. If you had shown the shaft, what you call the crank shaft, as running clear through to the opposite standard in your drawing, although it would have come to the middle of the standard, it would have been more like the drawing shown in the Dewey patent?

A. No, sir; I do not see it that way, because I could have taken the Dewey leg and run it down here as one leg, and resting on this piece, and set my treadle to one side.

Q. Then you would have had to have another standard to the machine?

A. Yes, sir.

Q. Then you would have something different?

A. Yes, sir, I would have.

Q. If you had put another brace down here for this to rest on, you would have something added to what is shown in the Dewey machine?

A. Not any more than I have now.

Q. You have not that added now to the brace, running down perpendicularly?

A. I think this support diverged into a brace.

Q. Then you have two supports running through here, and resting there you would have two?

A. I wouldn't have arranged it that way.

Q. If you had run this crank shaft clear through to the opposite standard of your drawing, would it not have been more like the drawing shown in the Dewey patent than the one you have made?

A. No, sir; I do not see it that way.

Q. You do not think you have added, so far as the drawings are concerned, or taken away anything from the original drawings of the Dewey patent?

A. No, sir, except the brake. I do not believe there is in the patent the shape of that support.

Q. The patent says B represents a shaft supported in a suitable frame, C C, which rests upon that?

A. Yes, sir.

Q. Now, this standard (indicating) represents the portion of the machine?

A. Yes, sir.

Q. You stated, a while ago, that your object was to show one part of this design—to extend it up so as to show this part?

A. I did not say though, that I had extended that up as a leg.

Q. You extend it up, do you not?

A. I place another leg to the side; I put a separate leg there altogether.

Q. Does the leg supporting the top of the machine—is that
171 what you call the new leg?

A. From this piece up. When I made this drawing I had nothing to do with these lines.

Q. If you had put it there (indicating) it would not be more like the Dewey patent, as I understand you?

A. No, sir.

Q. Do you find any hub shaft in the plaintiff's or defendant's device, such as is described in the drawings of the Dewey patent?

A. These are mentioned as hubs here, I believe. I think they are called A, those hubs.

Q. You do not find any such device in either the defendant's or plaintiff's device, do you—a hub on the end, through which the screws pass?

A. I think I find it on one side, on one of the defendant's machines, the one that has a screw coming from one side.

Q. Do you find it there?

A. I find it coming up on a separate brace of Exhibit No. 5.

Q. Isn't that *a* simply a screw there?

A. No, sir; it passes through the hub. You will find an enlargement there.

Q. Does not that screw just simply pass through the brace?

A. It passes through the brace and the enlargement of the brace, and is called a hub.

Q. Are not those hubs separated from the ends of the standards resting in circular sockets?

A. No, sir, they are not. The cross-sections show they are part of this core, molded in this standard.

Q. If that is so, they must be the top ends of the standard?

A. No, sir, not at all.

Q. If those hubs are molded in there in that way, how are you going to extend that standard up there?

A. If the standard was made that way, to extend it you would have to put a bolt. The support running up as high as the table was a molten metal, wherever the impression was made from the sand.

Q. When you look at the drawing in the specification of the Dewey patent, it is your contention, I believe—you see the devices described in the plaintiff's patent substantially as they are shown therein?

A. Not substantially as shown there, but substantially the same principle.

Q. Is that for a principle or for a mechanism?

A. It is for a mechanism.

Q. Then you do not find in the Dewey patent the mechanism substantially as described in the plaintiff's patent, do you?

A. There are changes; there are differences.

Q. Answer my question; yes or no.

A. No.

Q. Do you find in the Dewey patent a practical operating machine shown there?

A. I find, by inference, a sewing machine.

Q. It describes a sewing machine, does it not? The Dewey patent describes a machine?

172 A. It describes a part, but the patent, as I understand it, the brake attachment, is applied to sewing machines.

Q. Isn't that brake attachment a machine?

A. If you choose to take it that way.

Q. How do you take it?

A. We can argue it both ways.

Q. Now, just convince me that brake attachment is a machine.

A. It has a separate function from the rest of the sewing machine, and a sewing machine can be constructed and operated successfully without it.

Q. But taking that thing itself, is it a machine or not?

A. It is not a complete machine.

Q. Then it is not a machine?

A. No, sir.

Q. Take the adjustable bearings shown in the Dewey patent, with its crank shaft and standards, taking the elements I have described,

does it then show a practical operating machine? Suppose the treadle and the attachment was on there?

A. Yes, sir.

Q. Look at Exhibit 5, taking the fly-wheel, the bearings with the treadle attachment shown there; does that make a practical operating machine including the crank, also the bearings, the fly-wheel and the treadle attachment?

A. As I said before that is a question that can be argued on either side. If you set that mechanism up separately it would be an instrument for transmitting power. But it is not a part of the machine in a sewing machine.

Q. Those devices would operate anywhere where it was necessary to get that sort of power?

A. Yes, sir.

Q. It is immaterial whether it is attached to the sewing machine or not?

A. Yes, sir.

Q. Taking those things by themselves they will produce power?

A. Yes, sir.

Q. Then it is for the purpose of producing power?

A. Yes, sir.

Q. Look at the plaintiff's device and tell me if the mechanism therein shown in his patent for transmitting power, or for any purpose it may be used, whether it is not a practical operating machine.

A. Yes, sir.

Mr. SCRIVNER: In connection with the cross-examination of this witness I will offer in evidence a patent issued to the defendants themselves, dated February 17th, 1880, and numbered 224,710. (Marked Plaintiff's Exhibit 9.) And the following is a copy thereof, to wit:

"PLAINTIFF'S EXHIBIT 9."

UNITED STATES PATENT OFFICE.

LEBBEUS B. MILLER and PHILIP DIEHL, of Elizabeth, N. J., assignors to the Singer Manufacturing Company of New Jersey.

Band-wheel Bearing for Sewing Machines.

173 Specification forming part of letters patent No. 224,710, dated February 17, 1880. Application filed August 7, 1879.

To all whom it may concern:

Be it known that we, Lebbeus Baldwin Miller and Philip Diehl, both of Elizabeth, in the county of Union and State of New Jersey, have invented a new and useful improvement in band-wheel bearings for sewing machines, of which the following is a specification, reference being made to the accompanying drawings, in which—

(Here follows diagram marked p. 173*a*.)

Figure I is a plan of the whole of the central brace united to the side pieces E E′ of the frame, and also showing a plan of the band wheel, crank and attachments connected therewith, the inner end of the crank being supported in the lug H, attached to the central brace A, which is made in one piece only, as represented, and operates to strengthen and support the frame, connecting it firmly together as a whole, independent of the table or of any other part or connection whatever. Fig. II is a perspective view of a part of the central brace, showing the plan of its construction to receive the adjustable bearing for one end of the crank. Fig. III is a perspective view of the adjustable lug or bearing, a plan of which is shown at H in Fig. I, connected with the central brace. Fig. IV is a section of the crank end of the pitman.

The object of our invention is to do away with the rattling of the band wheel and to reduce the friction, also to simplify and condense the parts, lessening the cost, and avoiding the complications of the anti-rattling journals in use.

The crank is formed of a round piece of metal, and the bent portion is shaped in a regular and easy curve, so that the pitman, having the orifice *x* for the crank and the slit *y*, as shown in Fig. IV, will spring open sufficiently to permit the pitman to be slid over and along the easy curves of the crank to the bearing at the centre, which is shouldered, as shown, to receive it, and the pitman is there clasped and retained in position by means of the screw *z*.

In the drawings, A A A A, Fig. I, is the central brace, and A, Fig. II, is that portion of the central brace adapted as the bearing for the inner end of the crank, which rests at that end upon the entire central brace, A, and is supported thereby, as shown in Fig. I. B is the band wheel; C, the crank; D, the pitman; and E the side frame; upon which is the lug F, Fig. I, to support the outer end of

L. B. MILLER & P. DIEHL.

Band-Wheel Bearings for Sewing-Machines.

No. 224,710. Patented Feb. 17, 1880.

FIG. I.

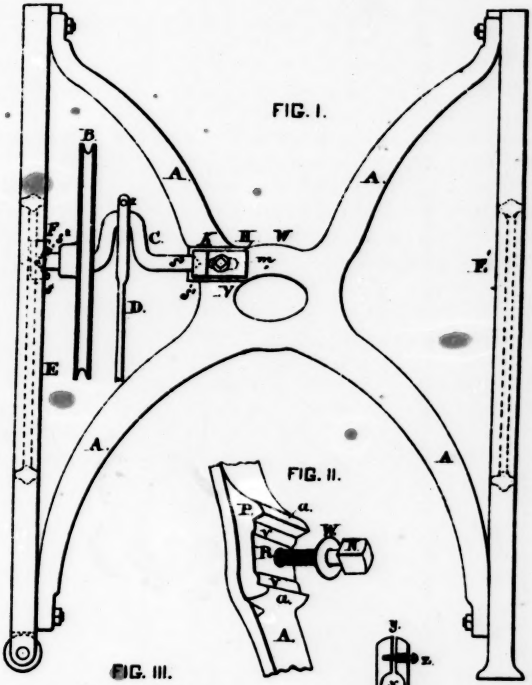
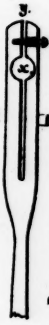


FIG. II.

FIG. III.

FIG. IV.



WITNESSES:

D. Ballauf

Emil Wagner

No. 955.
Singer Mfg. Co. } p. 173 2
p.
Bell

INVENTORS

Leblanc Baldwin Miller

Philip Diehl

by their attorney

Sydney A. Bennett

the crank. A projection, P, is cast upon the brace A, Fig. II, having the recess R, ribs *a a*, and slides *v v*, to receive the adjustable lug or bearing H, Fig. III, which is planned to fit between the ribs *a a*, to prevent its sagging, and rests on the slides *v v*, being retained in position by the washer W and bolt N, the bolt passing through the slot *m* in H to the brace A, which is tapped to receive it as shown in Fig. II. The adjustable lug or bearing H is show in appropriate position upon the central brace, A, in Fig. I.

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The ends of the crank s^2 s^3, Fig. I, are conical, and the recess *s* in the bearing F, Fig. I, and the recess *s'* in the lug or bearing H, Figs. I and III, are also conical, to receive the crank, as shown.

On band wheels as formerly constructed, having a bearing on a stud, the pitman was applied outside the bearing, causing a side or jamming movement and excessive wear and lost motion. In our improvement the power is applied at the centre, and the pressure is always directly upon the bearings, so that there is no tendency to a side or a jamming motion, and the friction and wear are consequently reduced to the least amount. The crank is supported at one end by the central brace, and at the other end by one of the side pieces of the frame.

By this arrangement a great advantage is obtained, as the crank presses down in direct line both upon the side of the frame and upon the central brace, thereby equalizing and distributing the weight throughout the entire frame without any lateral pressure whatever or any tendency to sag or break the side piece E, or to rack the frame when the machine is in operation. The crank also is thus very much shorter than if extended the whole length of the frame, as formerly, and the cost, friction, and wear are proportionately reduced. The bearings also being conical instead of straight, the end play of the crank is prevented, and an adjustment for wear and lost motion may be readily made by means of a set-screw on the central brace or on the side piece, or on both the central brace and the side piece, or by the use of an adjustable lug or bearing upon the central brace or the side piece, substantially as at H, Fig. I.

What we claim is—

1. In the frame of a sewing machine, the central brace, A, as a support or bearing for one end of the crank C, operating either in direct contact with the said central brace, A, or connected therewith by means of an adjustable lug or bearing, substantially in the manner and for the purposes described.

2. In the frame of a sewing machine, the crank C, having the conical bearings *s s'* s^2 s^3, in combination with an adjustable lug or bearing on the central brace, A, or on the side piece, E, substantially in the manner and for the purposes described.

3. The combination of the adjustable lug or bearing H, Fig. III, having the slot *m*, projection K, and recess *s'*, with the central brace, A, substantially in the manner and for the purposes described.

4. The adjustable lug or bearing H, in combination with the re-

cess R, projection P, slides *v v*, and ribs *a a*, substantially in the manner and for the purposes described.

175 5. The combination of the crank C, band wheel B, pitman D, adjustable lug or bearing H, projection P, slides *v v*, ribs *a a*, and bolt N, substantially in the manner and for the purposes described.

LEBBEUS BALDWIN MILLER.
PHILIP DIEHL.

Witnesses:
E. H. BENNETT.
DANIEL F. TOMPKINS.

Redirect examination.

Mr. WHEATON:

Q. What is the object of the fly-wheel on one of those shafts or in the plaintiff's apparatus? I refer to its use as a fly-wheel in contradistinction to its use as a driving wheel?

A. In the plaintiff's patent he uses the fly-wheel as part of his crank. This whole arrangement is nothing but a built-up crank shaft.

Q. The plaintiff calls it a compound fly and driving wheel. What feature of the wheel makes it a fly-wheel?

A. Its weight.

Q. What is the difference, if any, as known in mechanics, between a fly-wheel and a balance wheel?

A. There is no difference.

Q. Are those different names for the same thing?

A. Yes, sir, they are synonymous.

Q. Why are the two names used? Why is the balance wheel used in mechanics?

A. In all crank motions there are two points to which power cannot be imparted to the crank, a revolving motion cannot be imparted to it, so that the use of a fly-wheel or balance wheel by its weight at the periphery of the wheel gives it the necessary momentum necessary to carry the crank or shaft, and carry them over these dead points which occur twice in every revolution.

Q. In the Dewey machine would it have any perceptible effect in the amount of power that would be required to drive it if the entire weight of the driving shaft were removed?

A. No, practically you don't ever notice it, theoretically there is a difference, theoretically it increases the friction. I understood you to mean by taking out this whole shaft.

Q. Yes. Suppose it could be made absolutely without any weight whatever, would it be likely to give the same amount of momentum which would be lost in that, to increase the weight of the balance wheel that much?

A. No, sir.

Q. Or some part of that?

A. No, sir.

Q. Is there any momentum in a revolving shaft?

A. Practically none. There is momentum; I won't say there is no momentum. It is never considered as momentum, or ever used in practical mechanics.

176 Q. When you say there is a theoretical difference, but practically none, explain what you mean by that?

A. If there was no weight, there would be no friction. If there is excessive weight, there is a certain amount of power required to drive it, which is nothing but overcoming the friction. So that although you can lessen a very small amount of this shaft in length, practically you could not notice the difference in the power it would take to drive it.

Q. When you add weight to the balance wheel, does that also cause more friction on the bearings?

A. Yes, sir.

Mr. SCRIVNER:

Q. What was it you said about the momentum of the shaft not counting in the matter?

A. I said so.

Q. If you caught your coat-tail and got it fastened to a shaft, you would count the momentum something?

A. That is not momentum I have seen the results where two men were dashed to pieces, but that was not due to momentum.

Q. What was that due to?

A. To the power of the belt driving that shaft.

Q. Suppose the shaft did not drive at all, but the belt slipped on the shaft, it would be all right then?

A. Yes, sir.

Q. It is the revolution of the shaft?

A. Yes, sir, but it is not momentum.

WILLIAM JACKSON, called as a witness on behalf of the defendant, sworn, and testified as follows:

Q. What is your business?

A. I have been a machinist for 24 years. Am a native of England. Have been here since 1870. I have been in the sewing-machine business since 1871. I have been in the employ of the Singer Manufacturing Company for 20 years, 15 years in California.

Q. Have you been familiar with the various kinds of sewing machines during your employment in the sewing-machine business?

A. Yes, sir.

Q. Familiar with sewing-machine inventions?

A. Yes, sir.

Q. Did you ever hear of the Brill wheel, or sewing machine?

A. I first heard of it about six weeks ago.

Q. You never heard his wheel, invention or patent discussed around sewing-machine places?

A. No, sir, never.

Q. How many different kinds of sewing machines have you been familiar with?

A. Probably forty. All the leading sewing machines made in this country.

Q. Familiar with their construction?

A. Yes, sir.

Q. To what extent have you been acquainted with sewing-machine people and manufacturers besides the Singer Company?

A. Not to any extent; I have acquired my knowledge of different machines while in their employ. I have had reason to examine and understand all the leading machines of the country.

177 WILLIAM M. KINGSLEY was then sworn as a witness on behalf of defendant and testified as follows:

Q. What is your business?

A. I am city manager for the Singer Manufacturing Company. I have been in the sewing-machine business for 28 years, in Boston, New York, Maine, Ohio, Pennsylvania and California. I was in Boston in 1868. I have been employed by the Florence Sewing Machine Company, the Domestic Sewing Machine Company and by the defendant. I was in Buffalo, New York, in 1872. I was with the Singer Company in Cleveland, Ohio, in 1879.

Q. During your employment in the sewing-machine business have you become familiar with the different makes of sewing machines in this country, so that you understand their various constructions?

A. Yes, sir.

Q. Did you ever hear of the Brill wheel or the Brill sewing-machine device?

A. No, sir, not prior to the commencement of this trial.

Q. Have you had considerable experience with manufacturers and agents?

A. Yes, sir, I learned my trade as manufacturer.

Q. How extended has been your acquaintance with agents and manufacturers and dealers, in the different kinds of sewing machines for the last twenty years?

A. Very extensive.

Q. Has it or has it not been part of your business to be familiar with the various devices and improvements during that time?

A. Yes, sir.

Q. During that time you never heard of a Brill wheel, nor the Brill sewing-machine device nor the Brill patent?

A. No.

Cross-examination:

Q. Did you know the defendant had taken out a patent, the one that I read in evidence a little while ago?

A. No, sir.

Mr. KALLOCH:

Q. Did you ever see in any sewing machine the two adjustable screws for sustaining the shaft, having bearings one at each end?

A. Yes, sir, I have fitted them into sewing machines.
Q. In what machine have you seen them?
A. In the Florence.
Q. How are the bearings for the shaft of the Florence machine?
A. By two pointed screws with pointed centres, one on each side, the same as in this model here (pointing).
Q. In what other machine did you ever see those bearings?
A. The Wheeler and Wilson, and Elliptic, those machines in particular.

178 Q. Do you mean on the shaft of the needle arm, is that where you mean you have seen these point-screw bearings in the various sewing machines you have mentioned?

A. Yes, sir.
Q. How extensively have you seen them used in those mechanisms?
A. Going on 28 years.
Q. Please examine plaintiff's model. (Witness does so.) State whether the use and operation of the pointed-screw bearings at each end of the shaft in that model are the same identically as the use and operation of the same pointed screws in the shaft of the needle arm of the Florence device and the other machines you have mentioned.
A. Yes, sir, just the same principle.
Q. Then has the use, operation and result of those screws been substantially the same as those in all the devices you have seen in the last twenty-eight years?
A. Yes, sir, produces the same result.
Q. Can the shaft of the needle arm in that Florence machine be regulated by a screw at one end of the shaft and a pivot, not adjustable, at the other end?
A. It is made to have two screws, the same as in this model.
Q. Is it not necessary to use two screws to get the proper adjustment?
A. I will explain. If the shaft is properly lined up once, and there was not a great deal of lost motion in the machine, it could be done on one side.
Q. The object of the screws is to take up the lost motion?
A. Yes, sir.
Q. Suppose there is lost motion, then could it be properly regulated by one screw only?
A. It depends upon the amount of the lost motion.
Q. If there is any perceptible amount of lost motion, is it not necessary to have two screws?
A. Yes, sir.
Q. And you cannot regulate it with one?
A. Sometimes there is a great deal of lost motion, and sometimes a little. If there was a little, perhaps it would not be necessary to take up a great deal.
Q. If the lost motion was perceptible, it would be necessary to use two screws?
A. Yes, sir.

Mr. SCRIVNER:

Q. Then you could take up that small amount with one screw, could you not?

A. It depends upon the amount of lost motion.

Q. If the lost motion was small couldn't you take it up?

A. Yes, sir.

Q. What do you mean by saying if the lost motion was small you could take it up?

A. If there was a little lost motion it could be taken up by one screw. If the machine had been used and came in to be repaired, it would take two screws.

Q. Can you thoroughly regulate the action of those arms
179 by these screws?

A. It is set here at a certain height; all that becomes necessary is to take the bars out at each end, they have nothing to do with the up-and-down motion. The screws have nothing to do with it.

Q. What has to do with it?

A. It is a fixed arm. You set it on the brace there, and it is set a certain height in the machine.

Q. Does that ever get out of line?

A. I never knew it to get out of line.

C. L. HOVEY was then duly sworn as a witness on behalf of defendant, and testified as follows:

Mr. WHEATON:

Q. What is your occupation?

A. Real-estate business at present. I live in San Francisco.

Q. What, if anything, have you had to do with the sewing-machine business?

A. Prior to 1888, I was in the business about sixteen years continuously, commencing about 1872.

Q. In what capacity?

A. A portion of that time I was a general traveler for eastern companies, looking after their agencies, and their offices. Afterwards I had charge of different offices in different cities.

Q. Was your business while traveling connected with the sewing-machine business?

A. Wholly so.

Q. Were the agencies that you referred to agencies for selling sewing machines?

A. Yes, sir, and agencies run by the companies themselves in some cases.

Q. Over what parts of the United States were you traveling from 1872, forward?

A. From 1872 until 1876, I traveled principally through the State of New York, and the Eastern or New England States.

Q. With how many different kinds of sewing machines, as near as you can tell, did you become acquainted while you were in the business?

A. I became acquainted with them all in the position I occupied with the companies.

Q. When did you first hear of Mr. Brill's patent, or any device connected with sewing machines, with which Mr. Brill's name was connected?

A. I never heard of his patent before to-day.

Q. Did you ever hear of his name mentioned in connection with any kind of device attached to a sewing machine prior to the commencement of this suit a few months ago?

A. No, sir.

Q. If there had been any device connected with sewing machines, to any considerable extent, which was identified by calling it Mr. Brill's wheel, or treadle, or Mr. Brill's anything else, during the years you were in the business, would you have known of it?

A. If it had been prominently known, it is my opinion that I necessarily must have heard of it. It might have been an obscure patent, and I would not have heard of it.

180 Q. The question refers to any device that was in use without reference to whether it was patented or not?

A. Any device that had been prominently known, I must necessarily have known something about it.

Q. Were you in Cincinnati or Ohio at any part of the time that you have mentioned?

A. Yes, sir. I had charge of an office there in 1876–'7, I think it was.

Q. What kind of an office? How extensive?

A. A regular sewing-machine company's office; one of the large offices.

Cross-examination.

Mr. SCRIVNER:

Q. Are you prepared to swear point-blank that until within the last few days you never heard of the Brill device?

A. I never heard of it before to-day.

Q. I ask you if you will swear point-blank you never did hear of the Brill patent in 1874, in 1875, in 1876, in 1878, in 1879, in 1880?

A. To the best of my knowledge.

Q. That is all you mean about all of it, to the best of your recollection?

A. To the best of my recollection.

Q. Then, when you say you mean point-blank to swear to that, you mean to the best of your recollection?

A. Certainly.

ROBERT B. TODD was then called and sworn as a witness on behalf of defendant, and testified as follows:

Mr. KALLOCH:

Q. What is your business?

A. At present I am employed by John Taylor & Co. in the city; assayers' supplies and mill supplies.

Q. How long have you been in that business?

A. A little over a year and a half.

Q. What was your business prior to that time?

A. Mining a few years. Prior to that I was in the sewing-machine business, from 1869 until about 1880.

Q. Where were you in the sewing-machine business?

A. In New York city, Albany, New York, Philadelphia, Providence, Rhode Island, and traveled for concerns that located me all over the territory east of the Mississippi.

Q. For what companies were you engaged?

A. I was with the Domestic Sewing Machine Company most of the time; about a year, I think.

Q. And in what capacity?

A. Either as manager of an office or a branch of the different offices where I happened to be.

Q. Where were you in the year 1872?

A. I was in New York city with the Domestic Sewing Machine Company.

Q. And in 1879?

A. I think I was in Albany, with the Singer part of the time and part of the time with the Wilson.

Q. During the time to which you have testified, when you were in the sewing-machine company, was the nature of your
181 business such as to bring you in contact with sewing-machine agents and manufacturers and other representatives from different companies in the United States?

A. Yes, sir.

Q. During that time were you familiar with various sewing machines made in the United States?

A. Yes, sir.

Q. About how many kinds of sewing machines were you acquainted with in your business?

A. I do not know. We came in competition with eight to a dozen different makes.

Q. The prominent makes of the country?

A. Yes, sir.

Q. Did you have occasion to know the difference in their construction—their relative merits?

A. Yes, sir.

Q. Did you have occasion to know the various devices and improvements in sewing machines during the time you represented these companies?

A. Yes, sir, it was a part of my business to keep posted.

Q. Did you ever hear of the Brill device or Brill patent?

A. No, sir, I never did until within three or four days last past.

Q. In all your experience in the sewing-machine business and becoming acquainted with these different kinds and their various devices and improvements, you never heard of the Brill invention, the Brill device, Brill patent, or Brill himself?

A. No, sir, only except within the last few days.

Q. Was your business in connection with these sewing-machine companies such that you would have to become acquainted with any important, or well-known improvements in sewing-machine devices?

A. I think so.

Q. Almost unavoidably so?

A. Yes, sir.

Q. Are you familiar with the various devices applied to sewing machines during the time that you represented these companies for taking up lost motion of the mechanism constituted by the shaft and fly-wheel, and its appliances?

A. I think so.

Q. Will you state prior to the year 1872, if you can recollect, what mechanism was used in sewing machines or any of them for taking up the lost motion in the way I have mentioned?

A. The first arrangement was just an ordinary journal, with no arrangement for taking up lost motion, and about in the early seventies—I couldn't say as to the date—there was a journal, which we called the compensating journal, introduced for that purpose, and it was adopted by some of the companies.

Q. Can you describe that mechanism?

A. Yes, sir. It is a shaft with a cone on each side for the wheel to bear on, and by tightening it up with a screw-driver, it takes up the lost motion in the hub of the fly-wheel.

Q. Are you familiar with the patent known as the Reese patent?

A. Yes, sir; I think that is what I speak of.

Q. I now hand you the mechanism used for taking up the lost motion in that patent. Is that the device of which you speak?

A. Yes, sir.

182 Q. That was used, you say, prior to 1872?

A. About that date, I cannot say positively.

Q. Where were you at that time?

A. New York city, in the Domestic Company's employ.

Q. Did they use that device at that time?

A. Yes, sir, about that time. I think they adopted it about 1872.

Cross-examination.

Mr. SCRIVNER:

Q. You say they adopted it about 1872. Do you know when they quit using that?

A. They were using it when I left the business, 1879 or 1880.

Q. You say you are familiar with it. What is the object of that device?

A. To take up the lost motion.

Q. What do you understand to be the object of that particular device?

A. To take up the lost motion.

Q. There was no means prior to that time to take up the lost motion?

A. I do not recollect seeing any.

Q. So that when they began to use that particular thing shown in the Reese patent, they were seeking for a means of taking up lost motion?

A. I suppose so.

Q. They were hunting for devices to adjust the fly-wheel with the bearings; superior devices to what had been in use prior to that time?

A. Yes, sir.

Q. When did you hear of the plaintiff's device, or patent?

A. I think Friday or Saturday, possibly Monday.

Q. Will you swear point-blank that in 1874, you did not hear of Brill's patent?

A. Yes, sir.

Q. Point-blank?

A. Yes, sir.

Q. Your recollection is thorough on that question?

A. I think so.

Q. You do not think it is possible, that if you heard of it as far back as 1874, for you to forget it?

A. No, sir.

Q. Do you think that you did not hear of anything during the year 1874, or as far back as that, that you have not forgotten?

A. Possibly. But I do not think an important thing of that kind I would forget.

Q. You think you never forgot anything that you hear that is of importance?

A. Not in that length of time.

Q. Did you ever hear that there were as many as twenty-three companies who bought shop rights of the plaintiff?

A. No, sir.

W. B. HIGGINS, called on behalf of defendant, was sworn and testified as follows:

Mr. KALLOCH:

Q. What is your business?

A. Sewing-machine adjuster for about 32 years, in this city.

Q. With what companies have you been interested?

183 A. I have been with Wheeler & Wilson, and the rest of the time I was for myself.

Q. In what line of business by yourself?

A. Buying and selling all kinds of machines for about twenty years.

Q. What were the principal machines with which you have dealt during that time?

A. The Wheeler & Wilson, and the Singer and the Domestic.

Q. And the other principal machines of the country?

A. Yes, sir. There are thousand different kinds of machines. There used to be years ago.

Q. During these 32 years of your experience have you been familiar with the different kinds of machines made in the country?

A. Yes, sir.

Q. Have you had occasion to familiarize yourself with the different devices and improvements of sewing machines during that time?

A. Yes, sir.

Q. Has your business been such as to bring you into intercourse with the sewing-machine men, such as the agents and manufacturers of the machine during that time?

A. Yes, sir, the agents more especially.

Q. When did you, if ever, hear of what is known in this trial as the Brill wheel, or Brill device, or Brill patent?

A. To-day.

Q. Did you ever hear of it before?

A. No, sir.

Q. Did you ever hear of Mr. Brill before?

A. No, sir.

Q. Has your connection with sewing-machine companies, and your business in dealing with sewing machines, and the familiarity you had with the different devices, constructions and improvements, been such that you would have heard of the Brill device if it had been prominently talked of in sewing-machine circles?

A. I should have been very apt to.

Q. Is it at all probable that an important improvement in sewing machines would have been invented or talked of during the time you were in the business without your knowledge?

A. Not one chance in a million.

Cross-examination.

Mr. SCRIVNER:

Q. In your intercourse with these people did you ever ask them about any patent that existed on sewing machines?

A. No, sir.

Q. Did you ever hear of any talk about a patent on sewing machines?

A. Yes, sir, lots of them.

Q. Name one patent, and who it was you ever talked with.

A. That would be a very hard thing to do.

Q. You talked with a great many people about a great many patents?

A. Yes, sir.

Q. Can you tell the jury of a single one patent, and a single one man, you ever talked with about it?

A. I do not know that I can.

184 Q. Do you know the existence of any patent on sewing machines; if so state what patent you are familiar with?

A. I do not know that I am familiar with any particular patent. I have got six or eight myself on different things.

WARREN LESTER, called on behalf of defendant, and being sworn testified as follows:

Mr. KALLOCH:

Q. What is your business?

A. Sewing-machine adjuster for twenty-one years in Providence, New York, Newark, New Jersey, Los Angeles, and here, and also in Boston.

Q. Have you been in business for yourself during that time?

A. Yes, sir.

Q. By whom have you been engaged or employed?

A. Mostly by the Domestic Sewing Machine Company. I worked for the Wheeler & Wilson and the Singer.

Q. In whose employ are you now?

A. The Domestic Sewing Machine Company.

Q. Have you been engaged in adjusting machines during that time?

A. Most of the time; I have been most anything, from a tool-maker to an adjuster.

Q. Has that business been such that you would be familiar with the various makes of sewing machines in the country?

A. Yes, sir.

Q. All of them?

A. Yes, sir.

Q. Have you had occasion, during that time, to be acquainted with sewing-machine agents and representatives of the different companies?

A. Yes, sir.

Q. When did you, if ever, hear of what is called in this suit the Brill machine, the Brill device or Brill wheel?

A. Last Saturday.

Q. Did you ever hear of it before?

A. No, sir,

Q. Did you ever hear the name of Brill mentioned or connected with any sewing-machine device of any description?

A. I have not.

Q. Has your business been such during these years of which you have testified that you would necessarily have heard of any considerable improvement in the mechanism of sewing machines?

A. Yes, sir; I have looked into that most of the time; for anything new, I generally look into that.

Q. If any considerable improvement had been under any particular name, such as the Brill wheel, the Brill patent or device, during those years, you would have known it?

A. I would have noticed the difference. I do not know that I would have looked into the name of the patentee.

Q. If it had been prominently mentioned in connection with the name you would have heard it?

A. Undoubtedly.

185 Cross-examination.

Mr. SCRIVNER:

Q. How long has it been since you have looked into that particularly?

A. Since I have gone in the sewing-machine business I have studied that out.

Q. Studied what out?

A. The sewing-machine business.

Q. Did you ever study out who made the particular improvement or device?

A. No, sir.

Q. You never made any inquiry of any one about that?

A. No, sir.

Q. That did not concern you?

A. No, sir.

Q. What company are you working for now?

A. The Domestic Company.

Q. How long have you been working for that company?

A. About nineteen years.

Q. Did you know that about ten or twelve years ago the Domestic Company bought a shop right from Mr. Brill under his patent?

A. No, sir.

Mr. KALLOCH:

Q. You see the plaintiff's model sitting on the machine by your side, did you ever see a sewing machine constructed after that model?

A. No, sir.

Q. I will call your attention to the features of this model, which are undisputed; do you recognize this bracket which extends from the top of the table down in this model? I am not asking you, now, whether you ever saw it before or not. Do you understand the model?

A. Yes, sir.

Q. Do you see the pointed screw which goes through the lower end of the bracket, and makes a bearing for the crank arm?

A. Yes, sir.

Q. Do you recognize the crank arm, and this other short arm which extends and is fastened to the main wheel at one side of its centre? Do you recognize this combined driving and fly wheel?

A. Yes, sir.

Q. Do you recognize the pointed screw which goes through the other end of the model, and makes the bearing for that side of the wheel?

A. I see it in there.

Q. If those parts are as mentioned you understand how those screws operate as adjusted screws?

A. Yes, sir.

Q. State how they operate.

A. If the machine got any lost motion, by setting up these screws that would take up the play. On this you would take it up either side.

Q. On what machines, in your long experience, if any, have you ever seen the combination of two adjusting screws, with the arms as shown in that model and the fly-wheel, if any?

A. No, sir; I never run across a machine like that.

Q. Was not that form of application of a driving wheel with adjusting screws used in the Domestic machine at any time?

A. No, sir.

186 Q. How long did you say you were acting in connection with the Domestic machine?

A. About nineteen years. I began in 1871, I believe.

Q. Have you been connected with the Domestic sewing machine so as to know how it was made, or how it was adjusted, ever since 1871?

A. Yes, sir.

Cross-examination.

Mr. SCRIVNER:

Q. Do you know how many shops the Domestic Company has got?

A. One, in Newark, New Jersey.

Q. Are you prepared to swear that you have seen every single individual machine made and put on the market by the Domestic Company?

A. No, sir.

Q. They might have made a machine and put it on the market that had that identical thing in it shown by that model, and you not seen it?

A. Yes, sir.

Q. Your attention was called to this model of the plaintiff's device. You spoke of these screws for taking up the lost motion?

A. Yes, sir.

Q. You can take up the lost motion by one screw as well as both?

A. Yes, sir.

Q. As a matter of fact you would never use two screws at once?

A. No, sir, unless you want to keep the wheel in line with the fly-wheel of the machine.

Q. Now, for the purpose of taking up the lost motion the use of the two screws is not necessary?

A. No, sir.

W. R. EVANS, called on behalf of the defendant and being sworn, testified as follows:

Mr. KALLOCH:

Q. What is your business?

A. Sewing-machine business, over twenty years in various places, Pennsylvania, Newark, New Jersey; New York city, Boston, and San Francisco, with the Domestic Sewing Machine Company most of the time.

Q. Have you a general acquaintance with sewing machines?

A. Yes, sir, I think I have.

Q. Have you followed the various improvements in sewing-machine mechanism during that time?

A. I have taken a great deal of interest in them.

Q. Have you become familiarized with the different improvements?

A. As far as I could, being in one office.

Q. During that time have you become familiarized with the different makes of sewing machines?

A. Most all of them.

Q. Did you ever hear of what is known in this suit as the Brill wheel, or Brill device, or Brill patent?

A. Yes, sir.

Q. When did you hear of it?

A. This month some time.

Q. Did you ever hear of it before?

A. No, sir.

Q. Did you ever hear of Mr. Brill before?

A. Never.

187 Q. And you have had a general and thorough knowledge of the various sewing machines of the country, and of the improvements in the devices in those sewing machines for twenty years past?

A. I cannot say how general. I have had considerable knowledge of them.

Q. They have come under your observation?

A. Yes, sir.

Q. You have made a special study of the different sewing-machine devices?

A. Not all, only such things as were brought into common use.

Q. Those that were important or considered important in the ordinary use of sewing machines?

A. Most all of them. As far as anything came to my attention I was interested in it.

Cross-examination.

Mr. SCRIVNER:

Q. Did you know that your Domestic Sewing Machine Company bought a shop right of the plaintiff's patent?

A. No, sir, I never heard of that.

Q. Did you ever talk with people about the various patents on sewing machines?

A. Yes, sir.

Q. What patent did you talk about?

A. About the Domestic compensating journal, for one thing.

Q. That is the Reese patent. Did you talk about that patent?

A. Yes, sir.

Q. Did you ever see the patent?

A. Which?

Q. The Reese patent.

A. No, sir, I never heard of the Reese patent.

Q. Which one was it that you said?

A. I call it the Domestic. They claim it.

Q. What do you mean they claim, this cone journal?

A. Yes, sir.

Q. They claim that?

A. They claim to own the patent through some one else. That was previous to 1873, about the time when we first commenced using it.

Q. Did you ever talk with any one else or make any inquiry about the particular patented devices contained in the various sewing machines?

A. Only in a general way.

Redirect examination.

Mr. KALLOCH:

Q. How long have the Domestic folks used compensating journals?

A. All I can swear to is, it was either early in 1873 or previous to 1873.

Q. They have used them since that time—all the time? Still use them?

A. Yes, sir.

Q. Will you examine this device, which I hand you as a part of the Reese mechanism, and see if that is such as the Domestic company use?

A. Yes, sir, I think that is the same thing.

188 Q. Is that the device that they now use for taking up lost motion on this shaft and wheel?

A. Yes, sir.

Q. Examine plaintiff's model 2. What device is there for taking up the lost motion, if any?

A. The lost motion would be taken up by those pointed screws.

Q. One screw at each end of the shaft?

A. Yes, sir.

Q. How would the wheel be adjusted, changed in position, if necessary?

A. By loosening one screw, and setting up the other.

Q. By moving the screws?

A. Yes, sir.

Q. Did you ever see any mechanism of that kind, a pointed screw at each end of the shaft for the purpose of adjusting the wheel, or taking up the lost motion in a Domestic machine?

A. No, sir.

Q. Did the company ever employ that method?

A. Not to my knowledge.

Q. Did they ever use any point centres?

A. Nothing but these, the cones.

Q. Nothing but the device pointed out to you as a part of the Reese mechanism?

A. Not to my knowledge.

A. W. BLACK, called on behalf of defendant, and being sworn, testified as follows:

Mr. KALLOCH:

Q. What is your business?

A. Sewing-machine adjuster for 28 years, with the Wheeler & Wilson Company in Bridgeport, Boston, Philadelphia and San Francisco.

Q. During that time have you been a sewing-machine adjuster all that time?

A. For the first 16 years I worked in the factory.

Q. During that time did you become familiar with the different kinds of sewing machines of the country?

A. I think I did.

Q. Have you followed the various improvements in sewing-machine devices, so as to be familiar with them?

A. Yes, sir.

Q. Has your business been such as to familiarize you with the different makes of sewing machines in the country?

A. Yes, sir.

Q. When, if any, did you ever hear of the Brill device, or Brill wheel, or Brill patent?

A. Last Wednesday, for the first time.

Q. Did you ever hear Mr. Brill's name connected with any sewing machines, device or patent?

A. No, sir.

GEORGE R. WILSON, called on behalf of defendant, and being sworn, testified as follows:

Mr. KALLOCH:

Q. Were you ever in the sewing-machine business?

189 A. Yes, sir, 17 or 18 years, in St. Louis, Missouri, Illinois, Nebraska and San Francisco.

Q. In what capacity were you employed during that time?

A. I started out as a selling agent, and the last 8 or 10 years I was manager in this city of the Singer Manufacturing Company.

Q. Are you employed by them now?

A. No, sir.

Q. During that time did you have a familiar knowledge of the different kinds of sewing machines and devices and improvements in this country?

A. Yes, sir.

Q. Did you ever hear of the Brill device, or Brill wheel, or Brill patent, mentioned in this suit?

A. No, sir.

Q. When did you first hear of it, if ever?

A. Within a week or ten days.

Q. Did you ever hear of any device or sewing-machine mechanism mentioned in connection with Mr. Brill's name?

A. No, sir.

JAMES W. HAGGERTY, called on behalf of defendant, and being sworn, testified as follows:

Mr. KALLOCH:

Q. What is your business?

A. Sewing machines, 27 or 28 years, in Bridgeport, Connecticut, New York, San Francisco and Northampton.

Q. Has your business been such as to familiarize you with the different makes of sewing machines in the country?

A. Yes, sir.

Q. Have you followed the various improvements in sewing-machine devices?

A. Not all of them, but many of them.

Q. Your business has been such as to require you to?

A. Yes, sir.

Q. When, if ever, did you hear of what is called the Brill wheel or sewing-machine device—the Brill patent?

A. I think some day last week—last Saturday.

Q. Did you ever hear of it before?

A. No, sir.

Q. Did you ever hear his name mentioned in connection with any sewing-machine device or patent?

A. No, sir.

WILLIS B. FRY, called on behalf of defendant, and being sworn, testified as follows:

Mr. KALLOCH:

Q. What is your business?

A. I am the general agent for the Singer Manufacturing Company.

Q. How long have you been in business?

A. I have been in the sewing-machine business for over 20 years; with the Singer Company for over 14 years.

Q. What are you doing for them?

A. I have charge of the business on the Pacific coast.

190 Q. What has been the nature of your business, in connection with the sewing-machine industry prior to this employment?

A. I was first in the sewing-machine business, connected with the Weed Company, and was afterwards with the Domestic Company for several years. While with the Domestic Company my business at one time called me around the country looking into the business at different branch offices, so that I traveled throughout the South and as far west as Chicago.

Q. How extensively did you acquire knowledge of the various sewing machines made in this country?

A. I had a generally good idea of them as I saw them while traveling around from place to place, and heard of them in connection with the business.

Q. Did you follow the various improvements in sewing-machine devices?

A. Yes, sir, in a general way.

Q. You were interested in that respect?

A. Yes, sir.

Q. Has your business been such as to bring you in contact with other sewing-machine men, agents and representatives of other companies?

A. Yes, sir.

Q. Largely so?

A. Yes, sir.

Q. When, if ever, did you hear of the Brill device, or the Brill mechanism, in controversy in this suit?

A. Just at the time this suit was begun, when the papers were served on me, never before.

Q. When were you in the Domestic Company's employ?

A. I left the Domestic Company's employ in 1877.

Q. During your employ by this Singer Company, or the Domestic Company or any other company, did you ever hear Brill's name mentioned in connection with any sewing-machine improvements, device or patent?

A. No, sir.

Q. What kind of a compensating journal, if any, did the Domestic use while you were in their employ?

A. They commenced a compensating journal adjustable with cones at each end similar to this.

Q. Such a one as I now hand you, that is used in the Reese machine?

A. There is no sewing machine called the Reese. This was the Reese patent.

Q. That is the kind of compensating journal that was used by the Domestic?

A. Yes, sir, this same plan.

Q. Do you know what they use now?

A. I believe they use this same one. I have not examined the machine very recently.

Q. Look at the plaintiff's model No. 2. What is the device for taking up the lost motion in the mechanism?

A. Two screws, one at each end.

Q. Did you ever see or hear of such a device as that in this country for taking up the lost motion in sewing machines?

A. I have, here in this city.

191 Q. What machine?

A. In a machine that is marked as being made in Germany. It has the same pointed screws or conical screws running through, and the wheel or shaft is run on that same principle or plan.

Q. How long has it been in this country?

A. That I cannot say; from appearances it has been in this country a good many years.

Q. Did you ever see that mechanism for taking up lost motion in the shaft of a fly-wheel in any other sewing machine than this old German machine?

A. No, sir.

Q. You have seen it in other mechanisms?

A. I have seen it in lathes.

Q. Did you ever see any pointed screws for bearings in the Domestic machine, or see them used in the Domestic machine?

A. No, sir.

Q. This device that you have in your hand there, which is a part of the Reese device, so called, the Reese patent, is the only mechanism for taking up lost motion in regard to the shaft and wheel of the Domestic machine, of which you ever had any knowledge?

A. Yes, sir.

Mr. KALLOCH: We rest.

A. BRILL, recalled in his own behalf in rebuttal.

Mr. SCRIVNER:

Q. Look at Defendant's Exhibit 8, and just state what the paper is.

A. It is a sewing-machine patent issued to Henry C. Smith of Cleveland, Ohio, October 31st, 1871.

Q. Do you find such a clear and exact description of the device described as would enable any one skilled in the art to make from that description, or from either the specifications or drawings, your device?

A. No, sir.

Q. Do you find anything that would suggest to any mechanic your device, as described in your patent?

A. Not a thing.

Q. Look at this paper and state what it is (handing).

A. This a patent by E. W. Keyes, March 14th, 1871. It is a patent on a swinging treadle. Instead of oscillating this way, it swings.

Q. Do you find such a description in the specifications and drawings in that patent in such clear and exact terms, as will enable any

one skilled in the art, seeing that patent, to make the device described in your patent?

A. No, sir.

Cross-examination.

By Mr. KALLOCH:

Q. In this Keyes patent which you hold in your hand, you find a fly-wheel?

A. Yes, sir.

Q. You find such a bracket as you have in your device?

A. Yes, sir.

Q. You find standards such as you have in your device?

A. One standard, not the other.

192 Q. What do you call the one standard?

A. I call this standard that holds up the crank wheel on that side.

Q. That is the standard on one side of the machine, that holds up one end of the crank shaft?

A. It holds up the crank shaft on mine.

Q. At one end. This standard in the Keyes device?

A. Yes, sir.

Q. Why do you call it the standard?

A. Because it is the leg of the machine.

Q. How many standards are there there?

A. One.

Q. How many legs has that machine?

A. This is one here and one there, only one that has any bearing on this point.

Q. There are two standards then?

A. Yes, sir.

Q. Then there are as many standards as your machine?

A. Yes, sir.

Q. You find a fly-wheel, two standards and a bracket, such as there are in your machine? And a treadle; in other words you find substantially all the elements in the Keyes device that are in your claim, except the screw points?

A. And the adjustability is not here.

Q. Of what?

A. Of the fly-wheel.

Q. That is all that is not there, that is in your device?

A. That is not there. The point centres are not there and the adjustable parts. Two things are not there.

Q. Otherwise it is the same elements?

A. No, sir, the construction is different.

Q. In this Keyes patent, that you have told your counsel does not include such a clear and explicit description of your device, what is there lacking which makes you say so?

A. In the first place there are the centres, adjustability, the standard D on my fly-wheel, and my fly-wheel is adjusted on a crank, while that is on a shaft.

Q. Those are the differences?

A. Yes, sir, and the treadle is a swinging treadle.

Q. You have stated the reason why you state to your counsel that there is not that clear and explicit description in the Keyes patent?

A. Yes, sir.

Q. Your counsel asked you also to examine this Smith patent, marked Defendant's Exhibit 8, and you made the same answer, that there was no clear and explicit description in this patent of your device. What is there lacking?

A. The point centres are lacking, the adjustability is lacking, and the projection D, and the wheel is attached to the crank shaft, while mine is a crank.

Q. Did you draw a distinction between the point centres and the adjustability in your patent?

A. They hold up the wheel, and at the same time are there for the adjustment.

193 Q. Answer the question. Do you draw a distinction between the point centres and the adjustability in your patent? I will explain why I ask you. When I asked you what makes you say to your counsel that there is no clear and explicit description in this Smith patent, you say there are no point centres and adjustability. Do you draw a distinction between the point centres and the adjustability?

A. Yes, sir.

Q. Does not the adjustability depend upon the point centres?

A. Of course, they belong together.

Q. They are for the purpose of regulating the adjustability?

A. Yes, sir.

Q. Then why do you draw the distinction?

A. Because the point centres are not there, and the adjustability is not there.

Q. Cannot you adjust without the point centres?

A. I don't know if you could do that or not.

Q. Have you stated the reasons now, why you say to your counsel that there is no clear and explicit description of your device in this Smith patent?

A. Yes, sir.

Q. The fly-wheel is here, is it not, in the Smith patent?

A. Yes, sir.

Q. The bracket is here?

A. Yes, sir.

Q. The shaft is here?

A. Yes, sir.

Q. Everything is here, except the point centres and the adjustability?

A. And the way the wheel is on the outside. My wheel is on the inside, and the projection D, and that wheel is attached to a shaft crank, while mine is a crank.

A. C. BROWN, recalled in rebuttal:

Mr. SCRIVNER:

Q. Look at this Keyes patent, Exhibit 9. Do you find such a description in that patent, including the specifications and drawings, in such clear and exact terms as would enable one skilled in the art to, from the patent, make the devices described in the plaintiff's patent?

A. I do not.

Q. Is there anything in it that would suggest those devices to a skillful mechanic?

A. Not in my opinion.

Q. Now, look at Defendant's Exhibit 8; you have examined it before?

A. Yes, sir.

Q. State whether or not you find in that patent such a clear and exact description of the plaintiff's devices described in his patent, as would enable one skilled in the art to, from that patent, make the plaintiff's devices described in his patent.

A. No, sir; I cannot see that either in this. I cannot see anything suggestive of it.

Q. Is there anything in there that would suggest the plaintiff's devices as described in his patent, to one skilled in the art?

A. No, sir.

194 EDGAR THOMPSON, recalled in rebuttal:

Mr. SCRIVNER:

Q. You have seen Defendant's Exhibit 8 before; you have examined that patent; you are familiar with it?

A. Yes, sir.

Q. Do you find such a description in that patent, including the specifications and drawings, in such clear and exact terms as would enable one skilled in the art to which it relates to, from the patent, make the plaintiff's patented devices?

A. No, sir.

Q. Do you find anything in it that would suggest to a skillful mechanic how to make the plaintiff's device?

A. No, sir.

Q. Look at Defendant's Exhibit 8; have you examined that before? Are you familiar with it?

A. Yes, sir.

Q. State whether or not you find in that patent such a clear and exact description of the device described in the plaintiff's patent as would enable one, from the patent, to make the plaintiff's patented device.

A. No, sir.

Q. Do you find anything in there which would suggest to a skillful mechanic how to make the plaintiff's devices?

A. No, sir.

This closed the testimony in the case, and the foregoing constitutes all the testimony introduced.

After argument by the respective counsel the court proceeded to charge the jury.

Exception No. 21.

Prior to said charge and to the argument of counsel, the counsel for defendant requested the court to instruct the jury to find their verdict for the defendant, which said instruction the court then and there refused to give. To which said refusal of the court counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 22.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court and requested the court to give to the jury the following instruction:

"The inventor of an improvement cannot invoke the doctrine of equivalents to suppress other improvements which do not include his own, notwithstanding that such other improvements accomplish the same results as the patented improvements accomplish," which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

195 *Exception No. 23.*

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"If for any reason the jury decide that the plaintiff's patent is void, their verdict should be for the defendant," which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for the defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 24.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"Where a combination already exists of operating mechanical devices, it is not invention for any person to take one or more of those devices from the combination, and substitute for the device or devices so withdrawn, other devices which were in common use, for

performing the same kind of services as the devices performed which were withdrawn from the combination, and in such cases it makes no difference whether the substituted devices made the combination operate with less friction than the original combination operated or not," which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for the defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 25.

Prior to said charge and to the argument of counsel, the counsel for the defendant submitted to the court, and requested the court to give to the jury the following instruction:

"When a combination of mechanical devices is once made, the law conclusively presumes that skillful mechanics, from a knowledge of their business, know which, among all the devices that are in common use for performing the respective services which each one of the several devices in the combination respectively perform, will be best adapted to the use in such combination; and no substitution of such known devices, or any of them, for the similar devices which were already in the combination, will be patent-
196 able; and any patent granted for any such substitutions will be void," which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for the defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 26.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"If at the time that the patentee made his invention, the adjustable bearings shown in the patent were well known and in common use in other machines other than sewing machines, and while used in such other machines, could be operated so as to take up lost motion caused by the wearing away of the bearings, and also, by taking up such lost motion, prevent the noise occasioned by the loose journals, then the jury are to consider that any mechanic skilled in the business of making and using journal bearings, could, without any invention, and by virtue of his knowledge as a maker and user of journal bearings, apply those adjustable bearings in any machine where such adjustable bearings were applicable. In such case, if the mechanic found in a sewing or other machine journal bearings which were objectionable on account of their having too much friction, it would be no invention on his part to remove them and supply their place with the adjustable journals shown in the patent, and by so doing rid the bearings of the objectionable friction,"

which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 27.

Prior to said charge and to the argument of counsel, the counsel for the defendant submitted to the court, and requested the court to give to the jury the following instruction:

"It is contended by the defendant that the function which the screw performs is that of carrying the bearing cone or point of the screw towards or away from the sockets in the crank, with which it connects when the fly-wheel is in place. The defendant con-
197 tends that in order to move that bearing point up to the socket, as the parts are described in the patent, that the screw must be turned; and that when the screw is turned it will move that point in either one direction or the other; that the bearing point cannot be moved back and forth by the human hand, under the patented arrangement, but that it must be moved by the screw and cannot be moved in any other manner.

"If the jury find this contention of the defendant to be true then they should find that there is no mechanical equivalent of the screws or either of them, in the defendant's machine, unless there is some device there which will move the bearing points towards or away from the bearing sockets," which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 28.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"If the jury believe that the screws F and G of the patent perform the mechanical operation of moving the bearing points towards and away from the bearing sockets, they must not consider that the defendant's machine has any equivalent of those screws if there is no mechanical device in the defendant's machine which moves those bearing points towards and away from the bearing sockets. If there is no way of moving the bearing points and bearing sockets towards and away from each other, than to move them by the human hand, then there is no mechanical equivalent of the screws in the defendant's first machine," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for the defendant then and there duly excepted and tendered this, its bill of excep-

tions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 29.

Prior to said charge and to the argument of counsel, the counsel for the defendant submitted to the court, and requested the court to give to the jury the following instruction:

"Using the human hand to move a part is not using a mechanical equivalent of a mechanical device which moves the same
198 part. The human hand is not a mechanical device within the meaning of the patent law, and it is never the mechanical equivalent of a mechanical device," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court, to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 30.

Prior to said charge and the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"It is conceded that the second machine of the defendant had one adjusting screw but that it did not have two of them.

"The first claim of the patent is not infringed by the defendant's second machine, Exhibit 5, unless there is found in the machine not only one of the adjusting screws, but also a mechanical equivalent of the other adjusting screw.

"If the functions performed by each one of the two adjusting screws was to move one of the bearing points towards and away from one of the bearing sockets, then there was no infringement of the claim by the defendant's second machine unless it contained some mechanical device which would move the inside bearing points towards and away from the inside bearing socket," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 31.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"If in the defendant's machine there was no way of connecting and disconnecting the inside bearing point with the inside bearing socket other than to move one or the other by the human hand without the intervention of any mechanical device, then the defendant's second machine was no infringement of the second claim

of the patent," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for the defendant then and there duly excepted and tendered this, its bill of
199 exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 32.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"Another one of the elements of the first claim of the patent is the arm E. The arm E is described in the patent as 'an arm E, one end of which is attached to the wheel a little below its centre, as seen in Fig. 2, while the other end which projects upwardly is in line with the axis of the wheel,'" which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 33.

Prior to said charge and to the argument of counsel, the counsel for the defendant submitted to the court and requested the court to give to the jury the following instruction:

"One of the elements called for by the first claim is the 'arm E.' In order to be the 'arm E,' it must be an arm substantially as described in the patent, and it is there described as having one end attached to the wheel a little below its centre.

"The 'arm E,' therefore, which is named in the claim, cannot be construed to mean a crank arm which does not have one of its ends attached to the wheel at one side of its centre," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 34.

Prior to said charge and to the argument of counsel, the counsel for the defendant submitted to the court, and requested the court to give to the jury the following instruction:

"The first claim of the patent is not infringed by either one of the defendant's machines unless one or the other of those machines contained a crank arm which had one of its ends attached to the
200 driving wheel at one side of the centre," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for the defendant then and there duly excepted and tendered this, its bill of excep-

tions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 35.

Prior to said charge and to the argument of counsel, the counsel for the defendant submitted to the court, and requested the court to give to the jury the following instruction:

"The adjustable bearings which are called for by the second claim are 'adjustable bearings as and for the purpose shown and described.' In order to be the adjustable bearings of the patent, therefore, they must be such adjustable bearings as are described in the patent, and must be capable of being used as therein described, and they must be capable of accomplishing the purposes as the adjustable bearings of the patent accomplish and by substantially the same mode of operation.

"The purposes accomplished by the adjustable bearings of the patent are therein described to be to increase the ease of operating the machine, diminish the noise, and provide a means of readily adjusting the bearings of the driving or fly wheel, so that it may always run true and without shaking. The patent describes the adjustment as being made in the following manner, viz: 'Should the wheel become loose it can readily be brought to its bearings by tightening the screw-pins F, G.'

"The kind of adjustable bearings described in the patent to be used are described in the patent as follows, viz:

"'A screw-pin passing through the standard H, as seen at F, figures 1 and 2, has a pointed end, which enters a corresponding socket in the projection D, while another similar pin, G, Fig. 1, passes through the bracket B, and engages with a socket in arm E, as seen clearly in figure 1, thus furnishing bearings to the wheel C.'

"The second claim does not cover all and every kind of adjustable bearings. It covers only such adjustable bearings as are described in the patent, or which are substantially like those described in the patent. No other adjustable bearings are substantially like those described in the patent, unless they are capable of being adjusted by the same means. The means used for adjusting the bearings of the patent are the screw-pins F and G. If the screws are part of the adjusting apparatus by which the bearings are adjusted, then no other adjustable bearings would be substantially the same as the adjustable bearings of the patent, unless they had
201 either the screw, or some mechanical equivalent of the screw, by which to move the bearings together.

"If the bearings shown in the patent cannot be adjusted when arranged in the combinations shown in the patent without using the screws F and G, then no other adjustable bearings which can be adjusted by the human hand alone, without the intervention of any mechanical device for moving the parts of the bearings together, would be the adjustable bearings of the patent, nor would they

be the adjustable bearings that are covered by the claims of the patent.

"The second claim of the patent calls for adjustable bearings, and not for a single adjustable bearing. The patent further states the use of both bearings for adjusting the wheel. The patent says: 'Should the wheel become loose it can be brought to its bearings by tightening the screw-pins F, G.' The second claim of the patent would not be infringed by either of the defendant's machines, unless one or the other of them contained two adjustable bearings, each one of which must contain a screw or a mechanical equivalent of a screw, some mechanical device which would be the equivalent of the screw, that could be used as an equivalent of a screw for moving the bearing points together whenever the wheel should need adjusting.

"The jury must not consider the human hand as the equivalent of a screw when used for the purpose of moving the bearing points together," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 36.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court and requested the court to give to the jury the following instruction:

"A principle, as such, cannot be patented. It is not one of the subjects for which a patent can be granted, and it is not patentable. The general principle upon which two machines operate may be examined for the purpose of better determining whether or not what is patented in one of them is incorporated into the other," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for the defendant then and there duly excepted, and tendered this, its bill
202 of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 37.

Prior to said charge and to the argument of counsel, the counsel for the defendant submitted to the court and requested the court to give to the jury the following instruction:

"A patentee is not entitled to appropriate the principle upon which a machine operates any farther than he has for the first time developed that principle. If the patentee has only made an improvement in an existing machine, and in so doing has not changed the mode or principle of operation of the machine, then he has not developed any part of the principle of the machine, and

his patent must not be construed as covering anything more than the particular changes which he has made," which said instruction the court then and there refused to give as *instructed*.

To which said refusal of the court the counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 38.

Prior to said charge and to the argument of the counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"Where the patentee has not made an improvement which changes the principle or mode of operation of a machine in any respect, he is not entitled to appropriate or make his patent cover any mechanical equivalents or substitutes of the devices which he has applied," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 39.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"In this case the patent is not for any machine as an entire machine. It is not for a sewing machine, nor any improvement in a sewing machine. No sewing machine of any kind is shown in the drawings of the patent, nor is any claim made in the patent
203 that covers any part or parts of a sewing machine. The specifications of the patent declares at the beginning that the patentee has 'invented a new and useful improvement in sewing-machine treadles.' The claims of the patent do not however refer to or cover any sewing-machine treadles, or any improvement of any nature or kind in sewing-machine treadles," which said instruction the court then and there refused to give as requested.

To which said refusal of the court, the counsel for the defendant then and there duly excepted, and tendered this, its bill of exceptions to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 40.

Prior to said charge and to the argument of the counsel, counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"The specifications further say:

"'A, figures 1 and 2, represent an ordinary sewing-machine table,

and B, a bracket attached to the under side of it.' Except in these two instances the words 'sewing machine' *is* not used in the patent at all. The claims of the patent do not mention sewing machines, and if the jury believe that the combinations covered by the claims are applicable to other machines in the same manner and with the same effect as they are applicable to sewing machines, they should only consider them in their general character as combinations, which are applicable to, and may be used with all kinds of machines to which they can be applied, and have the same effects and results follow as when they are applied to sewing machines, and the jury should not consider such combinations as applied to sewing machines alone," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 41.

Prior to said charge and to the argument of counsel, the counsel for the defendant submitted to the court, and requested the court to give to the jury the following instruction:

"Where the patented invention is for an entire machine which is entirely new, a somewhat different rule applies to the construction of the patent from the rules which apply to the construction of patents which are for improvements only," which said instruction the court then and there refused to give as requested.

204 To which said refusal of the court, the counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 42.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"In this case the patent is not for an entire machine, and, therefore, the rules of construction which apply to new machines, and do not apply to mere improvements in an existing machine, do not apply to this case. The claims of the patent are for combinations only, and, therefore, the rule- which apply to the construction of this patent are the rules which apply generally to the patents which are for combinations only," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 43.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to jury the following instruction:

"If the jury believe from the evidence that the defendant has sold machines which contained one of the adjustable screws designated in the plaintiff's patent by the letters F and G, but does not believe that the defendant's machines contained the second one of such adjustable screws, or any mechanical equivalent therefor, then the jury should find that the first claim of the patent has not been infringed by the defendant, and their verdict should be for the defendant, upon such first claim.

"If the jury believe, from the evidence, that the defendant's second machine contained one of the adjusting screws F or G, but did not contain the other one of the adjusting screws, nor any mechanical equivalent of it they should find that the second claim of the plaintiff's patent has not been infringed and their verdict should be for the defendant upon the second claim," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

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Exception No. 44.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"One device is not the mechanical equivalent of another device unless it performs the same function and by substantially the same mode of operation," which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 45.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"If, therefore, the jury believe that substantially the same combinations which are covered by the claims of the patent had been in public use in turning lathes prior to the patentee's invention, and also believe that when so applied to turning lathes, they were used to produce the same effects and results as they produced when applied to a sewing machine, then the application of them to sewing machines was only double use of those combinations and not patentable, and the jury should find for the defendant upon this ground

alone," which said instruction the court then and there refused to give as requested.

To which said refusal of the court, counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 46.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"The damages of the plaintiff is the amount that he has lost by the infringement. If the defendant has sold machines for a larger price on account of having the plaintiff's invention attached to such machines, the plaintiff would be entitled to recover as damages
206 the difference between the price at which the machines would have been sold without the attachment and the price at which they did sell with the attachment.

"But before the plaintiff can rely upon this rule for assessing his damages, he must first prove that the machines were sold for a larger price on account of having the attachment, than they would have sold for without the attachment.

"If there is no such proof in the case the jury must not undertake to assess any damages under this rule," which said instruction the court then and there refused to give as requested.

To which said refusal of the court, counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 47.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"Another method for assessing damages is for the plaintiff to prove that he has lost sales of his invention on account of the infringement. In order for the plaintiff to rely upon this rule he must first prove that he has lost sales of his invention on account of the infringement, and in addition to such proof he must also prove how much he has lost in money on account of the loss of such sales," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 48.

Prior to said charge and to the argument of the counsel, the counsel for the defendant submitted to the court, and requested the court to give to the jury the following instruction:

"Another rule for assessing damages is for the plaintiff to prove that he had an established royalty for which he sold to others the right to use his invention, and which others paid to him for such right. In this case the plaintiff has not proved any established royalty for the use of his invention, and the jury must not assess damages upon the basis of a royalty for the use of the invention," which said instruction the court then and there refused to give as requested.

To which said refusal of the court, counsel for defendant
207 then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 49.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"If the plaintiff has not proved that he has lost any money on account of the infringement of the defendant, if there has been any such infringement, or if his testimony fails to show how much money he has lost, either on account of competition in business, or on account of not receiving the difference between some higher price which the defendant's machine sold for, on account of having the invention attached to them, than they would have sold for without having it attached, then the jury must only find nominal damages, in case they find that the patent is valid and that it has been infringed by the defendant," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 50.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"Unless the proof shows that the defendant made a profit by selling the plaintiff's invention, or that the plaintiff has lost money by competition in business resulting from the infringement, the jury must find nominal damages only," which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 51.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court and requested the court to give to the jury the following instruction:

"In order to produce a patentable combination there must be a co-operative action of all the several devices of which the
208 combination is composed. The combination covered by the first claim of the patent includes, as two of its elements, the brackets 'B' and the standard 'H.' The patent does not show that either the bracket B, or the standard H, performs any active part whatever, but that they are stationary devices which hold the active mechanism in position," which said instruction the court then and there refused to give as requested.

To which said refusal of the court the counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 52.

Prior to said charge and to the argument of counsel, the counsel for the defendant submitted to the court, and requested the court to give to the jury the following instruction:

"If the jury believe from the evidence that the bracket B, or the standard H, do not co-act with the other devices named in the combination so as to produce a joint effect which is due to such co-action, but believe that the results produced by such bracket or standard is the independent result of holding the bearings in place in substantially the same manner as the standard had formerly held the bearings in place, then they should find that there is no patentable combination of the standard with the bearings shown in the patent, but that the assemblage of parts is an aggregation only, in which aggregation the standard performs substantially the same service that it formerly performed, and that its action has not been changed or modified on account of the change made in the bearings, if any change in the bearings has been made by the patentee," which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for the defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 53.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"The driving or fly wheel is also made an element in each one of the combinations covered by the claims of the patent.

"In order to make the fly or driving wheel an element in the patentable combination with the adjustable bearings, it must appear that the action of such wheel is in some way blended
209 with the action of the adjustable bearings. If the fly or driving wheel is driven, when used with the adjustable bearings, just as it was driven when used with other bearings, and if such wheel is used with a band and drives the machine above it, just as it formerly drove such machines when used with other bearings,

then the use of the fly or driving wheel with the adjustable bearings is only an aggregation of parts and the patent is void," which said instruction the court then and there refused to give as requested.

To which said refusal of the court counsel for the defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 54.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"If the action of the driving or fly wheel is in no way influenced or modified, or changed by the action of the adjustable bearings, and if the action of the adjustable bearings is in no way influenced or modified or changed by the action of the fly-wheel, then there is only an aggregation of parts and the patent is void for this reason alone," which said instruction the court then and there refused to give as requested.

To which said refusal of the court, counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 55.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"It is not enough that the adjustable bearings may permit of the use of less power with which to drive the driving wheel.

"That would only affect the amount of power that is used at the treadle and the pitman which operates the driving wheel. If the driving wheel was formerly turned with the former bearings the same as it is turned with the adjustable bearings, and if its own action was precisely the same when it was used with the former bearings as it is when it is used with the adjustable bearings, it makes no difference whether it requires more power to produce such action of the driving wheel in one case than it did in the other case or not," which said instruction the court then and there refused to give as requested.

210 To which said refusal of the court, the counsel for defendant then and there duly excepted and tendered this, its bill of exceptions to the court to sign and seal and the court did thereupon sign and seal the same.

Exception No. 56.

Prior to said charge and to the argument of counsel, the counsel for defendant submitted to the court, and requested the court to give to the jury the following instruction:

"The question is not whether it took more power in one case than it did in the other case or not, but the question is as to whether the action of the driving wheel is changed or modified or in any way affected by the action of the adjustable bearings so that it performs, or assists in performing or accomplishing, any result which it did not perform, or assist in performing or accomplishing, when it was used with the former bearings. If it does not, then there is no new patentable combination formed by substituting the adjustable bearings for the other bearings that were formerly in use, and the patent is void," which said instruction the court then and there refused to give as requested.

To which said refusal of the court, the counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

The entire charge of the court to the jury was as follows:

United States Circuit Court, Northern District of California.

FRIDAY, *October 30th*, 1891.

The COURT: Gentlemen of the jury, I take this occasion to thank you for your promptness in attending upon the sessions of the court during this trial, and to assure you that it has been a pleasure to me to witness the care and attention, as well as patience, that you have paid to the testimony of the witnesses and to the arguments of counsel.

I am confident that your desire has been, throughout this entire trial, to ascertain the truth, which is the object, end and aim of all litigation of this character, and I have no doubt that you will carry with you into the jury-room the same desire to reach an honest and impartial result.

You are the sole judges of the credibility and weight that is to be given to the different witnesses who have testified upon this trial. A witness is presumed to speak the truth. This presumption, however, may be repelled by the manner in which he testifies, by the character of his testimony, or by the evidence
211 affecting his character for truth, honesty or integrity, or his motives, or by contradictory evidence, and the jury are the exclusive judges of his credibility.

In judging of the credibility of the witnesses in this case, because their testimony is to a great extent conflicting, the jury may believe the whole, or any part, of the evidence of any witness, and may disbelieve the whole, or any part of it, as may be dictated by their judgment as reasonable men.

You should carefully scrutinize all the testimony given, and in so doing consider all the circumstances under which any witness has testified, his degree of intelligence, his manner while on the stand, the relation which he bears to the case, and the manner in which he might be affected by a verdict, the extent to which he is contradicted or corroborated by other evidence, if at all, and any other consideration that tends to shed light upon his veracity or credibility, and

to determine the amount of evidence to which each witness and each statement is entitled at your hands as reasonable and intelligent men.

But in this respect you must remember that your power and duty to judge of the effect of evidence is not an arbitrary one. It must be exercised with legal discretion and in subordination to the ordinary rules of evidence.

A patent is *prima facie* evidence of its own validity. The burden of establishing its invalidity rests upon the defendant.

There are three questions in the main to which your attention has been called by counsel, and in reference to which it becomes my duty to give instructions. It will necessarily, to some extent, be long, because it is the duty of the court to give instructions that will cover the contentions of both sides of the case.

The questions of fact are left for you to determine—which side has been borne out by the testimony; but I will be compelled in giving the instructions to give them so that they might apply to any fact in this case which you think has been established by the evidence.

The first question to which your attention will be directed is the question of invention. Of course if you find that there has been no invention on the part of the plaintiff in this case, there is an end of the case, and it becomes your duty to find a verdict for the defendant, and you have nothing to consider.

If, however, upon that point you should find that there was an invention, the next question comes up on the question of infringement; and there, if you find that there has been no infringement by the defendant, that would be the end of the case, and you should find your verdict for the defendant.

But if you should find both of these points in favor of the
212 plaintiff, then it becomes necessary for you to consider the third question, that of damages.

With reference to the question of invention, you are instructed that the claims of the plaintiff's patent sued on in this case are what is known in common law as combination claims. The law recognizes as patentable any improvement in any art or mechanical construction, or combination, which is useful to the public and not before known. To be patentable a thing must not only be new and useful, but must amount to an invention or discovery.

When the result is produced by a combination of old mechanical elements, or parts, without the use of any new element, the true question in such a case is whether or not the combination of elements made by the patentee is new. If they have never been combined together in the manner stated in the patent, and if the combination is new and useful, not being the result of mere mechanical skill, then it is patentable.

Each and all of the separate parts of the combination may be old and well known, as in this case, the patentee Brill does not claim to have discovered or invented a fly-wheel, screws, bearings, brackets and braces, nor in fact any one of the single elements shown and

described in his patent. It is conceded that they are old devices, well known in mechanics.

The claim of the plaintiff is that his combination of these different devices is new and useful, and if you find that they are new and useful, the patent would be valid. The law does not sanction the defeat of combination patents on the ground that the several parts are old, if the combination is new and useful. In determining whether a device is an invention or not, the result which has been produced by the change can be taken into consideration with it, and the novelty of the result, or its superior utility, is evidence of invention.

Invention, in the sense of the patent law, is the finding out, contriving or creating something not existing and not known before, by the action of the intellect. It is the work of the head as distinguished from the work of the hand, and must result from the intuitive faculty of the mind put forth in search for new results or new methods. The true test whether a device is the result of invention or mechanical skill, is whether an ordinary or skilled mechanic would make it without other suggestion than his knowledge of the art.

The sufficiency of invention does not depend on the quantity of thought, ingenuity, skill, labor, experiment or amount of money which the inventor may have bestowed upon his production; if there be anything material and new which is an improvement of the trade, that will be sufficient to support the patent.

213 The change or new combinations or relations must introduce or embody some new mode of operation or accomplish some effect not before produced; but if a particular result is obtained, which was long desired and some time sought but never before attained, want of invention must not be predicated of a device or process which first reached that result on the ground that the simplicity of the means is so marked that many believe they could have readily produced it if required.

Invention indicates genius and the production of a new idea. A new idea may be engrafted upon an old invention and be distinguished from the conception which preceded it, and be an improvement; in such case the patent is valid. The simplicity of an invention, so far from being an objection to it, may constitute its great excellence and value. It is sometimes difficult to determine what degree of improvement takes a case out of the mere exercise of mechanical judgment and skill, and puts it within the domain of invention or discovery.

As a general rule, it may be safely said that any change in the position of old elements, whereby new and useful results are accomplished, is sufficient exercise of the inventive faculty to warrant the issuing of letters patent.

The test is that the improvement must be the product of an original conception. A mere carrying forward or more extended application of an original idea, the mere improvement in degree, is not an invention.

Invention is that which brings out from the realm of the mind

something that never existed before and gives it to the country. The combination of old devices into a new article, without producing any new mode of operation, is not an invention. A new arrangement or grouping together of parts or elements of a patented article, which is the mere result of mechanical judgment, and the natural outgrowth of mechanical skill is not invention.

As embodying these general ideas, I read from one of the authorities that was cited from the Supreme Court of the United States: "A patentable invention is a mental result. It must be new and shown to be of practical utility. Everything within the domain of the conception belongs to him who conceived it. The machine, process or product is but its material reflex and embodiment. A new idea may be engrafted upon an old invention, be distinct from the conception which preceded it, and be an improvement. In such case it is patentable. The prior patentee cannot use it without the consent of the improver, and the latter cannot use the original invention without the consent of the former. But a mere carrying forward or new or more extended application of the original thought,
214 a change only in form, proportions or degree, the substitution of equivalents, doing substantially the same thing in the same way by substantially the same means, with better results, is not such invention as will sustain a patent. These rules apply alike, whether what preceded was covered by a patent or rested only in public knowledge and use.

In neither case can there be an invasion of such domain and an appropriation of anything found there.

In one case everything belongs to the prior patentee, in the other to the public at large."

Numerous instructions have been asked by the respective counsel upon this point, bearing upon the details of this case. I shall not undertake to go over the entire ground, but to give such only as will give a general knowledge of the contention of counsel and of the principle of law that applies to that particular contention.

If the jury believe from the evidence that the plaintiff was the first who applied a driving or fly wheel with operative bearings for holding the wheel in its place and enable it to perform its duties as a driving and fly wheel, then he will have a right to treat as infringers all who, during the lifetime of his patent, made or used or sold driving or fly wheels with operative bearings of any kind, operating on the same principle and performing the same functions with the same means or equivalent combinations. But if the jury find from the evidence that the plaintiff was not the first inventor of a driving or fly wheel which with operative bearings was placed in a sewing machine, in the same position in which he placed it, and which performed the same duties as a driving or fly wheel which is described in the patent, then his invention is but an improvement of an existing machine, in part, and he cannot treat another as an infringer who has improved the original machine by use of a different form or a different combination which performs the same functions.

These instructions will be somewhat blended together, the question of invention and infringement.

I have tried to separate them, but it is impossible to do so, because I have not had time to sort them out.

If the patentee did nothing but substitute one kind of crank and adjustable bearings, for a crank and bearings which were already in use, for accomplishing the results of securing the fly or driving wheel in its proper position and revolving it, and thereby causing it to drive the sewing machine to which it belonged, and if the crank and adjustable bearings which the patentee so substituted for the others that were already in use were a crank and adjustable bearings which had been already in public use on other sewing machines or turning lathes, for holding other driving or fly wheels in
215 their proper position, and revolving them for driving machinery of any kind, then the patentee did not make any patentable invention.

So long as a skilled mechanic would know by his knowledge of his business that friction would be avoided in a machine by the application of the adjustable bearings shown in the patent, and that the lost motion of the worn bearings could be taken up, and the noise resulting from the lost motion thereby avoided, it could not and would not constitute any invention for any mechanic, to so apply those adjustable bearings and thereby produce the result, which, before he made the application, he knew would follow.

Whatever would not constitute a patentable invention, if made by a skilled mechanic, would not constitute a patentable invention if made by any other person who was not a mechanic.

It is to be decided by the rule of a skilled mechanic. No one can appropriate to his exclusive use, by a patent any part of the mechanical knowledge, which is the public property of the world.

There is nothing patentable except what includes an invention or discovery. It is not any invention under the patent law, to apply old and well-known devices to new uses which are strictly analogous, in their use, to which the old devices have commonly been applied, although by applying the devices for the first time to an existing machine, the machine may be improved, still in such new application of devices, if they perform the same functions which they formerly performed in other machines, and any skilled mechanic would know, from his knowledge of his business, how to apply them to the existing machine for the first time, upon being called upon to do so, then there would not be any patentable invention to so apply these well-known devices for the first time to the existing machine to which they had never before been applied.

Some stress was laid in the argument of this case, as to whether or not this was a combination of old elements, or a mere aggregation. One or two instructions which are drawn, I will give you in this connection on that point. Under the patent laws, the courts have recognized two classes or arrangements of mechanical devices, in which the devices are assembled together, and on account of being so assembled together they are more conveniently used. One class of these arrangements are called combinations, and when they

are new and useful, they are patentable. The other class of such assemblages of mechanical devices are called aggregations and they are not patentable.

The distinctions between the combinations which are patentable, and the aggregations which are not patentable, consists in the fact that in patentable combinations the several mechanical elements co-act with each other so as to produce a new result by their co-
216 action, which is a different result from that which is obtained by adding together the several results which the several devices separately produce. While an aggregation consists of an assemblage of mechanical devices in which each device performs its own function, but that function does not blend with the functions of the other devices so as to produce a new blended result, that is different from what the separate results of the device when added together would be.

In a patentable combination of old elements, all the constituents must so enter into it as that each qualifies every other. It must form either a new machine of a distinct character and functions, or produce a result due to the joint and co-operating action of all the elements, and which is not the mere adding together of separate contributions.

With reference to the question of anticipation, it is contended by the defendant that the patented device mentioned in plaintiff's patent were anticipated by several prior devices.

Upon this point I instruct you as a matter of law that by the term "anticipations" is meant substantial identity; that is to say, for a prior device to be an anticipation of a patented device, it must be substantially identical with the patented device. It is your duty to determine the fact, from the evidence, whether any of the prior patented devices shown to have been in existence before the date of plaintiff's patent were substantially identical with plaintiff's patented device. Unless you find such identity, the patent is not anticipated. In determining whether two devices are or are not substantially identical, you must determine whether or not they produce substantially the same result in substantially the same manner.

In this case, therefore, you will ascertain from the evidence, first, what is the result performed by the patented device of the plaintiff; and second, what is the manner in which that result is performed? What is the mechanism or combination of elements by which that result is performed? Having determined these questions, you will then consider the prior devices claimed to be anticipations, and ascertain what is the result performed by them and what is the manner in which the result is performed; that is to say, what is the mechanism or combination of elements by which the result is performed?

If you find both the result and the means of performing that result, in any of the prior devices offered by defendant, to be substantially identical with the plaintiff's patent, then there is anticipation; but if you find that both the result and the means of accomplishing the result are different, then there is no anticipation.

It is not enough that any one of the patents offered in an-
217 ticipation by the defendant should simply show some one or more elements less than the whole described in the plaintiff's patent.

The mechanism or device described in a patent, in order to anticipate the plaintiff's patent, must show the whole invention in itself, because the plaintiff had a right, if he could, to select from any number of prior patents or existing machines, the separate elements thereof, and combine them in a new machine, which, if new and useful, would entitle him to a patent; and, showing the existence of all of the elements of the plaintiff's invention in various other patents, would not defeat his claim.

Where a thing patented is an entirety, consisting of a single device or combination of old elements, incapable of division or separate use, the defendant cannot escape the charge of infringement by alleging or proving that a part of the entire thing is found in one prior patent, or printed publication, or machine, and another part in another prior exhibit, and still another part in a third one, and from the three or any greater number of such exhibits draw the conclusion that the patentee is not the original or first inventor of the patented improvement. A description in any prior publication, in order to defeat a patent, must contain and exhibit a substantial representation of the patented improvement in such full, clear and exact terms, as to enable any person skilled in the art or science to which it appertains to make, construct and practice the invention patented. It must be an account of a complete and operative invention, capable of being put into practical operation. And unless such description is sufficiently full to enable such person to comprehend it without assistance from the patent in suit, it is insufficient to invalidate the patent.

The phrase "substantially as and for the purpose shown and described" which is contained in each one of the claims of the plaintiff's patent, throws you back into a description of the patent, for a qualification of the claims and the several elements of which the combination is composed. That certain clause is, to a certain extent, a limitation upon the patent, and in this case the court instructs you that the two claims of the plaintiff's patent are thereby so limited as not to cover a machine not constructed substantially as and for the purpose described in the patent. The second claim of the plaintiff's patent is the combination with a driving or fly wheel of adjustable bearings substantially as and for the purpose described. That does not mean, nor does it cover such a combination of a fly-wheel with adjustable bearings as shown in the Dewey patent, which has been so often referred to in the testimony of the witnesses and by counsel, unless you should find contained in the Dewey patent such a description of the plaintiff's devices in such
full, clear and exact terms as would enable a person skilled
218 in the art to which it relates to make the thing covered by the plaintiff's patent. If, however, you should find such a description of the plaintiff's patented devices made in such full, clear and exact terms as would enable any one skilled in the art to

which it relates, and without any other information whatever make the plaintiff's patented devices, then it would anticipate the plaintiff's patent.

Upon the question of infringement, I have been asked by the defendant to give you such instructions applicable to this question. Whenever a device is omitted from the combination of a claim and another device is put in its place, such substituted device is not a mechanical equivalent of the omitted device unless it performs the same functions as the omitted device, and by substantially the same mode of operation.

Whenever a claim of a patent covers a combination only, any person may lawfully use all the parts of that combination except one, and he may lawfully substitute for the one part which he omits, any other mechanical structure or device that is substantially different in its construction and operation although serving the same purpose; in so doing, he will not be guilty of an infringement.

As this claim is for a combination of devices and nothing else, before the jury can find it to be infringed they must find in the defendant's machine each and every one of the devices which is named in the claim, or if any one or more of those devices is not in the defendant's machine, there must be found there in place of each one of such omitted devices some other device which substantially performs the same functions the omitted device performed, and it must perform these same functions by substantially the same method of operation.

It is conceded that in the defendant's first machine, represented by Exhibit No. 3, there was not either one of the screws which is designated in the patent by the letters "F" and "G." This being so, the jury must find that the first claim is not infringed by that machine, unless they find in it the mechanical equivalents of those screws "F" and "G."

In considering this question the jury should first examine those screws, apply the testimony given to them, and determine what office or duties they performed in the combination, and they should not find that any device found in the defendant's machine was an equivalent of either one of those screws, unless it performed the same functions which the screw performed. A patentee is bound by the claims of his patent. No matter what is described in his patent, his rights are measured and bound by the claims of his patent, and he can recover for nothing which is described in the patent, which is outside of those claims.

219 Whenever the claims of a patent are for combinations only, there can be no infringement unless every element of the combination covered by the claim or its equivalent is used by the defendant. Where the claim is for a combination only, every person may lawfully use all the elements of that combination less one and may arrange the elements less one so used in the same as they are arranged in the patent.

Whenever the claim of a patent is for a combination, neither the court nor the jury is authorized to throw out from the claim a single

one of the devices which is named in the claim as one of the elements of the combination. In no case can there be an infringement of a combination, unless every element of the combination named in the claim, or a substitute for every element that is omitted, is found in the defendant's machine.

If the jury believe from the evidence that the defendant has sold machines which contained one of the adjustable screws designated in plaintiff's patent by the letters "F" and "G," but does not believe that the defendant's machine contained the second one of such adjustable screws, or any mechanical equivalent therefor, then the jury should find that the first claim of the patent has not been infringed by the defendant, and the verdict should be for the defendant upon such first claim. What relates to the first claim the same will be applied to the second claim, in regard to infringement.

In order to determine the question of infringement, it is necessary for you to carefully examine and see what the plaintiff's patent is for, and what it secures to him.

The plaintiff's patent is divided into two parts. All patents, for that matter, are divided into two parts: the specifications and the claims. The claims, being the conclusion which has been referred to, and setting forth distinctly what it is the patentee claims as his invention and asks to be secured to him by his patent.

The specification which precedes the claims is referred to, read and examined in connection with the claims, only to explain the claims and ascertain their true extent. There are two claims in this patent which read as follows:

"1. The combination of the wheel C, arm E, bracket B, standard H, and screws F and G, substantially as and for the purpose shown and specified.

"2. The combination, with a driving or fly wheel, of adjustable bearings, substantially as and for the purpose shown and described."

In the specification the patentee says: "The object of my invention is to increase the ease of operating the machine, diminish the noise and provide a means of readily adjusting the bearings of the driving or fly wheel, so that it may always run true and without shaking."

220 From this statement in the specification, it appears that the patentee had three objects or purposes to accomplish, or which he desired to accomplish, by means of the devices described, to wit: 1st. To increase the ease of operating the machine; 2nd. To diminish the noise; and 3rd. To provide a means of readily adjusting the bearings of the driving or fly wheel.

It is claimed by the plaintiff in this case that all of these results are accomplished by his devices, and that the devices by which they are accomplished are new and useful. The first claim of the plaintiff's patent is what is known as a combination claim. It consists of five elements, which I have already read.

The plaintiff does not claim to have invented any single one of these elements, and the court instructs you that in order to infringe this first claim it is necessary to find in the alleged infringing ma-

chine all of the elements of this combination or their mechanical equivalents.

The plaintiff contends that the defendant has the wheel C the arm E, and that instead of the bracket B, it has the standard which has been explained to you, which he claims performs the same function in substantially the same way, and accomplishes the same results as his bracket B, and that in place of the other element in this claim, screws F and G, that it has a sliding screw which has also been explained to you, or the single screw in the standard which he claims accomplishes the same result in substantially the same way, and performs the same function as his elements designated by the screws F and G.

You will notice that one of the features in this patented device is that the wheel swings on what the witnesses call "point centres," the object being to reduce friction, lighten the running of machine, and by means of these screws, or their equivalent device, take up the lost or slack motion that may result from the wear of the bearings. You will see that the defendant only takes up the lost motion from one end of the arm or crank, while in the plaintiff's patent it is claimed that the lost motion can be taken up from both ends of the arm or crank.

If the device used by the defendant has combined in it elements or devices which are mechanical equivalents of the elements shown in the patent, and which accomplish the purposes of the patented invention, then the fact that the defendant only used one screw instead of two, putting the other end of the arm or crank upon a point centre as shown in the exhibit, the variation would not be material.

In regard to the law of equivalent devices, the court instructs you that when in mechanics one device does a particular thing, or accomplishes a particular result, every other device known or
221 used in mechanics, which skillful and experienced workmen know will produce the same work, or do the same particular thing, is a known mechanical substitute for the first device.

Patentees of inventions, consisting merely of a combination of old ingredients are entitled to equivalents, by which is meant that the patent, in respect to each of the respective ingredients comprising the invention, covers every other ingredient which, in the same arrangement of the parts, will perform the same function, if it was well known as a proper substitute for the one described in the specification at the date of the patent. A party who merely substitutes another old ingredient for one of the ingredients of the patented combination, is an infringer, if the substitute performs the same function as the ingredient for which it is so substituted, and it appears that it was well known at the date of the patent that it was adaptable for that use. A mechanical equivalent means something that does substantially the same thing in substantially the same way.

Where a patented device is attempted to be evaded by a change in its construction, the change must be the result of the mind; of genius, of invention, in which there is something more than mere mechanical skill and ingenuity. A change in the arrangement and

construction is not substantial unless there is embodied in it, over and beyond the skill of the mechanic, that element of the mind which is to be found in every machine or improvement that is the proper subject of the patent.

If you believe that the arrangement of the devices shown in the exhibit of the plaintiff's machine accomplished the same results in substantially the same way, or by the same or substantially the same devices as described in the patent, you must find that the first claim of the plaintiff is infringed.

Where there is more than one claim of the patent, it is not necessary to prove or to find that the defendant has infringed more than one claim. But in this case the plaintiff claims that both the claims of his patent have been infringed by the defendant. It is a question for you to determine whether either of them has been infringed.

In regard to the second claim, the court instructs you that it is also a combination claim, but it is broader and covers more ground than the first claim already considered.

The second claim is a combination of a driving or fly wheel with adjustable bearings. The same general rules apply to the construction of this claim that the court has given you in regard to the first claim, though it does not embody so many elements. To infringe this claim there must be a driving or fly wheel, and that driving or fly wheel must swing or operate in adjustable bearings, and substantially in the manner described.

222 It is a familiar rule that the copy of the principle or mode of operation described in the patent is an infringement of it, and that it is only ingenious diversities of form and proportion, presenting the appearance, or something unlike the thing patented, which give rise to questions of non-infringement.

So long as the patentee's ideas are found in the construction and arrangement, no matter what may be its form or shape or appearance, the party using is appropriating the patented invention, and is an infringer. An infringement takes place whenever a party avails himself of the invention of the patentee, without such variation as will constitute a new discovery, and when it involves substantial identity.

The word "substantial," as applied to questions of infringements of patent, is not susceptible of an exact definition. The law looks more to the substance of things than to their forms. It is not necessary, to constitute infringement, that the party should work by the specification of a patent.

Where the alleged infringing machine is substantially the same, or operates in the same, or substantially the same way, to produce the same result as that described in the patent, the two machines must be in principle the same.

The same result must be understood to mean the same kind of result, though there may be a difference in degree or extent.

The result is the same, according to this definition, whether one produces more than the other or not, if the result is to make the

same article. If the result is the same in kind, it is not necessary that it shall be the same in degree.

The principle of a machine means the peculiar mode, manner or device by which the proposed result or effect is produced. In other words, the combination of powers by which a definite result is produced is called the principle. And if the principle is the same, and the effect is similar, in contemplation of law the machines are identical.

With reference to the patent that was obtained by the defendant, assignee of Miller and Diehl, covering these exhibits offered, the court instructs you that the issuance of this latter patent, the patent to the defendant, does not necessarily prevent the device described therein from infringing the plaintiff's patent. The jury understands that, that the mere fact of the issuance of that patent does not. The defendant, or any other person, had the right to improve upon the devices described in the plaintiff's patent, and to receive from the Government of the United States a patent for such improvements; but the owner of this patent would have no right to use the prior patented devices without the consent of the original patentee. Nor would the original patentee have the right to
223 use the improvements described in the latter patent without the consent of the latter patentee. It does not follow, therefore, that because the defendant obtained the patent referred to, that the devices made and sold by the defendant, as shown by Exhibits 2 and 3, do not infringe the plaintiff's patent. The question for you to determine is whether or not the devices sold by the defendant infringed the plaintiff's patent under the rules of law given you by the court, and, if they do, it makes no difference whether the defendant has a patent for them or not.

Gentlemen of the jury, I believe that is all, except upon the last question, that of damages.

The burden of proving damages is upon the plaintiff. Damages must be proved, and not conjectured or guessed at. The jury must find only the actual damages that are proved, if they find for the plaintiff on the other questions involved.

In assessing damages, the jury must consider only such testimony that has been given in the case as tends to actually prove that the plaintiff has sustained actual damages from the infringer. Such testimony as has been given in the case which amounts only to conjecture, which is not estimated from any known data which furnishes a basis from which the amount of damages suffered by the plaintiff can be calculated, should not be considered.

The burden of proving actual damages, as I said before, is upon the plaintiff. Such damages must be proved by the testimony. They must not be conjectured or arbitrarily fixed without proof of facts from which the jury may estimate them by a mathematical calculation.

If the proof shows that the defendant made a profit by selling the plaintiff's invention, or if it shows that the plaintiff lost money from competition in business on account of the infringement, the jury must still find only nominal damages, unless the testimony

shows how much profit the defendant so made, or unless it shows how much money the defendant so lost in competition in business, or unless the testimony furnishes a certain data from which the jury can make a calculation that is certain, as to how much profit was so made by the defendant, or how much money was so lost by the plaintiff.

There cannot be any fixed rule of damages which applies to all patent cases. The mode of ascertaining actual damages must necessarily depend on the peculiar nature of the patent, and it is your duty to ascertain the actual damages sustained by the plaintiff, according to the circumstances of the case.

The price of the machine, the nature, actual state and extent of the use of the patentee's invention and the particular losses to which he may have been subjected by the infringement, are all proper ingredients to be weighed by the jury when estimating damages.

224 The jury are to give only the actual damages which the patentee has sustained, not vindictive and speculative damages, but such damages as the patentee shows that he has actually sustained by the infringement of his patents. The damages must not be speculative or fanciful, but must be actual and real.

The profits made by the defendant, if any, by making or selling the patented invention—when I use the word "patented" invention, that is the only consideration that the jury may find it to be a patented invention—the damages are the profits which have been derived to the defendant by means of the patented invention over any other mode which the defendant had a right to adopt. And the extent of the benefits derived by the defendant by the use of the patented invention are an element in the question of damages for your consideration.

The plaintiff claims that there is an actual saving in the cost of manufacturing his patented devices over any other devices for accomplishing the same purpose which was open to the public, and which the defendant had a right to use, of ten cents each. This, you remember, is contradicted on the part of the defendant. It is a matter of fact for you to determine, and if you should find that the plaintiff's position was correct, then it would constitute one of the elements of damages, and one basis for your verdict upon that question.

If you believe from the evidence that the plaintiff made and sold these patented devices for three dollars each, and that they only cost him fifty cents each, thereby leaving him a profit of $2.50 each, this forms a basis from which you may estimate the damages in this case.

It is claimed by the plaintiff that during the year 1879 the defendant sold 3,000 of such family machines, making a total, as they claim, of 33,361 family sewing machines.

It is claimed and contended on the part of the plaintiff that all of these machines contained the devices described in his patent, and were infringements of it; if you should find these claims to be true, by fixing the rate of damages that he be allowed for each machine,

you would have no difficulty in estimating the damages to which the plaintiff is entitled.

This, gentlemen of the jury, is all of the instructions I think it is necessary to give you. I regret that it has taken up so much time, but it was impossible for me to limit it and to cover, as I wished to do, the various points that were claimed by the respective counsel.

It only remains for me to say that it takes twelve men—unanimous vote, to find a verdict.

When you go to your jury-room you will consider the questions of fact which have been presented to you by the testimony
225 in this case, for, after all, this case is really to be determined, under the principles of law that have been announced by the court, by you upon the facts. You are to determine this without any partiality, favor or enmity towards either of the parties in the case.

I regret that any remarks should be made by counsel relative to one party being rich or the other poor. This you will leave out of all question. It makes no difference whether your verdict is for a party that is poor or the party that is rich. You have nothing to do with the parties.

What you have to do with are the facts, and the facts alone. What were the principles of law announced by the court?

Take those and be governed by them and determine in your own minds and in your own way, with the same care and attention that you have given to the evidence, what are the facts to be applied to the principles of law that have been laid down by the judge, and find your verdict in that way, so as to reach the ends of justice, irrespective of the parties to this suit.

When you arrive at a verdict, if you should find there is no invention, then you need not consider any other question, and your verdict will be simply: "We, the jury, find a verdict for the defendant." If you find that point for the plaintiff, then you will consider the question of infringement; when you consider that, if you find that for the defendant, that would be the end of the case, and you would simply find a verdict for the defendant. But if you find both of those for the plaintiff, then you would have to consider the amount of damages to which the plaintiff is entitled under the principles of law which have been announced to you by the court, and then your verdict will be: "We, the jury, find for the plaintiff, and assess the damages at so much," whatever it may be, and the clerk will give you the forms of verdict.

A JUROR: One question I would like to ask your honor. It is possible that a question may come before us, and that is whether Dewey saw everything in his patent, and whether Brill, coming after him, might have seen something in his mechanism that Dewey himself had not seen.

The COURT: I don't know as I exactly understand the juror.

The JUROR: I base it on "Merwin on Patentable Inventions," on page 304, art. 101, note C:

(Reading): "So, also, if a patent describes a process or a contriv-

ance in such a manner that an unforeseen benefit, or rather its possible occurrence, is included thereby, but so included that its happening or not is a mere matter of chance, then a subsequent discoverer of it is entitled to a patent." We would like to have you say on that point.

226 The COURT: Pass up that.

(The memorandum is handed to the court.)

I think that I have already instructed the jury upon every point, and that this matter has no special application to this case. I think I have fully instructed the jury in regard to that matter, and I will not give any instructions on that.

Exception No. 57.

In the course of the charge to the jury the court gave the following instructions:

"If the device used by the defendant has combined in it elements or devices which are mechanical equivalents of the elements shown in the patent, and which accomplish the purposes of the patented invention, then the fact that the defendant only used one screw instead of two, putting the other end of the arm or crank upon a point centre, as shown in the exhibit, the variation would not be material."

To which said portion of said charge counsel for the defendant then and there duly excepted and tendered to the court this, its bill of exceptions, to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 58.

In a subsequent portion of the charge the court instructed the jury, as follows:

"In regard to the law of equivalent devices the court instructs you that when in mechanics one device does a particular thing, or accomplishes a particular result, every other device known or used in mechanics, which skillful and experienced workmen know will produce the same work, or do the same particular thing, is a known mechanical substitute for the first device."

To which said portion of said charge counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 59.

In a subsequent portion of the charge the court instructed the jury, as follows:

"Patentees of inventions consisting merely of a combination of old ingredients are entitled to equivalents, by which is meant that the patent, in respect to each of the respective ingredients comprising the invention, covers every other ingredient which, in the same

arrangement of the parts, will perform the same function, if
227 it was well known as a proper substitute for the one described in the specification at the date of the patent.

"A party who merely substitutes another old ingredient for one of the ingredients of the patented combination, is an infringer, if the substitute performs the same function as the ingredient for which it is so substituted, and it appears that it was well known at the date of the patent that it was adaptable for that use."

To which portion of said charge counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 60.

In a subsequent portion of the charge the court instructed the jury, as follows:

"A mechanical equivalent means something that does substantially the same thing in substantially the same way. Where a patented device is attempted to be evaded by a change in its construction, the change must be the result of the mind, of genius, of invention, in which there is something more than mere mechanical skill and ingenuity. A change in the arrangement and construction is not substantial unless there is embodied in it, over and beyond the skill of the mechanic, that element of the mind which is to be found in every machine or improvement that is the proper subject of a patent."

To which portion of said charge counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 61.

In a subsequent portion of the charge the court instructed the jury as follows:

"If you believe that the arrangement of the devices shown in the exhibit of the plaintiff's machine accomplished the same result in substantially the same way, or by the same or substantially the same devices as described in the patent, you must find that the first claim of the patent is infringed."

To which said portion of said charge counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 62.

In a subsequent portion of the charge, the court instructed the jury as follows:

228 "In regard to the second claim the court instructs you, that it is also a combination claim, but it is broader and covers more ground than the first claim already considered. The second claim is a combination of a driving or fly wheel with adjustable

bearings. The same general rules apply to the construction of this claim that the court has given you in regard to the first claim, though it does not embody so many elements. To infringe this claim, there must be a driving or fly wheel, and that driving or fly wheel must swing or operate in adjustable bearings and substantially in the manner described."

To which portion of said charge, counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 63.

In a subsequent portion of the charge, the court instructed the jury as follows:

"It is a familiar rule, that a copy of the principle or mode of operation described in the patent, is an infringement of it, and that it is only ingenious diversities of form and proportion, presenting the appearance of something unlike the thing patented, which gives rise to question of non-infringement. So long as the patentee's ideas are found in the construction and arrangement, no matter what may be its form or shape or appearance, the party using it is appropriating the patented invention and is an infringer. An infringement takes place whenever a party avails himself of the invention of the patentee, without such variations as will constitute a new discovery, and when it involves substantial identity."

To which portion of said charge counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 64.

In a subsequent portion of the charge the court instructed the jury as follows:

"The word 'substantial,' as applied to questions of infringement of patents, is not susceptible of an exact definition.

"The law looks more to the substance of things than to their forms.

"It is not necessary to constitute infringement, that the party should work by the specifications of a patent. Where the
229 alleged infringing machine is substantially the same, or operates in the same or substantially the same way to produce the same result as that described in the patent, the two machines must be in principle the same. The same result must be understood to be the same kind of result, though there may be a difference in degree or extent. The result is the same, according to this definition, whether one produces more than the other or not, if the result is to make the same article.

"If the result is the same in kind, it is not necessary that it shall be the same in degree."

To which portion of said charge counsel for defendant then and there duly excepted, and tendered this, its bill of exceptions, to the

court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 65.

In a subsequent portion of the charge the court instructed the jury as follows:

"The principle of a machine means the peculiar mode, manner, or device by which the proposed result or effect is produced. In other words, the combination of powers by which a definite result is produced, is called the principle. And if the principle is the same and the effect is similar, in contemplation of law the machines are identical."

To which portion of said charge counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 66.

In a subsequent portion of the charge the court instructed the jury as follows:

"With reference to the patent that was obtained by defendant, assignee of Miller and Diehl, covering these exhibits offered, the court instructs you that the issuance of this latter patent, the patent to the defendant, does not necessarily prevent the device described therein from infringing the plaintiff's patent. The jury understand that, that the mere fact of the issuance of that patent does not. The defendant, or any other person, had the right to improve upon the devices described in the plaintiff's patent, and to receive from the Government of the United States a patent for such improvements; but the owner of this patent would have no right to use the prior patented devices without the consent of the original patentee. Nor would the original patentee have the right to use the improvements described in the latter patent, without the consent of the latter patentee. It does not follow, therefore, that because the defendant obtained the patent referred to, that the devices made and
230 sold by defendant, as shown in Exhibits 2 and 3, do not infringe the plaintiff's patent. The question for you to determine is whether or not the devices sold by the defendant infringed the plaintiff's patent, under the rules of law given you by the court, and if they do it makes no difference whether the defendant has a patent for them or not."

To which portion of said charge counsel for defendant then and there duly excepted and tendered this its bill of exceptions to the court to sign and seal, and the court did thereupon sign and seal the same.

Exception No. 67.

In a subsequent portion of the charge the court instructed the jury as follows:

"If you believe from the evidence that the plaintiff made and sold these patented devices for three dollars each, and that they

only cost him fifty cents each, thereby leaving him a profit of $2.50 each, this forms a basis from which you may estimate the damages in this case."

To which portion of said charge counsel for defendant then and there duly excepted and tendered this, its bill of exceptions, to the court to sign and seal, and the court did thereupon sign and seal the same.

The jury then retired and soon returned with a verdict in favor of the plaintiff for damages in the sum of ten thousand and eight dollars and thirty-one cents.

And now, in furtherance of justice and that right may be done, the defendant presents the foregoing, as its bill of exceptions in this case, and prays that the same may be settled and allowed, and signed and certified by the judge as provided by law.

WHEATON, KALLOCH & KIERCE AND
F. M. HUSTED, *Attorneys for Defendant.*

It is hereby stipulated and agreed by and between the parties hereto that the foregoing bill of exceptions is correct, and that the same may be settled, allowed and filed as of the term in which the cause was tried, *nunc pro tunc*, time being waived by both parties hereto.

Dated March 3rd, 1892.

SCRIVNER & SCHELL AND
C. W. M. SMITH, *Att'ys for Plaintiff.*
WHEATON, KALLOCH & KIERCE AND
F. M. HUSTED, *Att'ys for Defendant.*

231 The foregoing bill of exceptions is hereby allowed and settled as correct.

Dated March 4, 1892.

(Signed) THOMAS P. HAWLEY,
Acting Circuit Judge.

(Endorsed): Filed after settlement this 4th day of March, 1892. L. S. B. Sawyer, clerk.

Petition for Writ of Error.

In the United States Circuit Court, Northern District of California.

A. BRILL, Plaintiff,
vs.
THE SINGER MANUFACTURING COMPANY (a Corporation), Defendant. } No. 11296.

Petition of the defendant for an order allowing a writ of error.

The Singer Manufacturing Company, defendant in the above-entitled cause, feeling itself aggrieved by the verdict of the jury and the judgment entered on the 31st day of October, 1891, in pursuance of said verdict, whereby it was ordered, adjudged and de-

creed that each of the two claims of the plaintiff's patent sued upon were good and valid in law, and that the defendant had infringed upon each of the said claims of plaintiff's said patent, and decreeing that the plaintiff have and recover of and from the defendant the sum of $10,008.30 damages with costs, comes now by Wheaton, Kalloch & Kierce and F. M. Husted, Esq., its attorneys, and petitions said court for an order allowing said defendant to prosecute a writ of error to the honorable the United States circuit court of appeals for the ninth circuit, under and according to the laws of the United States in that behalf made and provided, and also that an order be made fixing the amount of security which defendant shall give and furnish upon said writ of error, and that upon the giving of such security all further proceedings in this court be suspended and stayed until the determination of said writ of error by said United States circuit court of appeals for the ninth circuit. And your petitioner will ever pray.

WHEATON, KALLOCH & KIERCE AND
F. M. HUSTED, *Attorneys for Defendant.*

(Endorsed): Filed March 28, 1892. L. S. B. Sawyer, clerk.

232 *Assignment of Errors.*

In the United States Circuit Court of Appeals for the Ninth Circuit.

THE SINGER MANUFACTURING COMPANY, Plaintiff in Error,
vs
A. BRILL, Defendant in Error.

Assignment of errors.

Now comes The Singer Manufacturing Company, the plaintiff in error herein, by Wheaton, Kalloch & Kierce and F. M. Husted, its attorneys and counsel, and particularly specifies the following as the errors upon which it will rely, and which it will urge upon its writ of error in the above-entitled cause:

1.

That the United States circuit court in and for the northern district of California erred in overruling the objection of the counsel for the plaintiff in error to the following question, asked the witness A. C. Brown:

"Q. Now, I will ask you if the Brill wheel is superior to the old style of hub wheel?" and in permitting the witness to answer the same.

2.

That the said court erred in overruling the objection of the counsel for the plaintiff in error to the following question, asked the witness A. C. Brown:

"Q. What in your judgment is the difference in the value be-

tween the machine described in the plaintiff's patent and that used by the defendant prior to the patent?" and in permitting the witness to answer the same.

3.

That the said court erred in sustaining the objection of the defendant in error to the following question, asked the witness A. C. Brown on cross-examination:

"Mr. WHEATON:

"Q. Do you undertake to say that if this crank shaft was cut off at this point, and this crank put in at that point, and the screw point and screw made to hold it just exactly over here, as it does in the position now shown?"

4.

That the said court erred in sustaining the objection of the defendant in error to the following question, asked the witness A. C. Brown on cross-examination:

"Q. I show you a wheel with a crank shaft in it, and ask you what is the difference, if any, between that crank shaft
233 shown in the wheel which I present and the crank shaft shown in the Dewey patent, except the difference in length?"

5.

That the said court erred in sustaining the objection of the defendant in error to the following question, asked the witness A. C. Brown on cross-examination:

"Q. Why is it a part of the crank any more than this projection here is a part of the crank in that"?

6.

That the said court erred in overruling the motion of the plaintiff in error to strike out the testimony given by the witness A. C. Brown on redirect examination, as to the value of the machines with the Brill wheel in over the old devices used in sewing machines.

7.

That the said court erred in overruling the motion of the plaintiff in error to strike out the testimony given by the witness G. M. Glover on direct examination.

8.

That the said court erred in overruling the objection of the plaintiff in error to the following question, asked the witness G. M. Glover:

"Q. In your opinion do you think that a machine, sewing machine, the defendant's machine, with what is called the Brill wheel in it, is of more value than the Singer machine, with what is called the the hub wheel in it"?

9.

That the said court erred in overruling the objection of the plaintiff in error to the following question, asked the witness G. M. Glover:

"Well, now, how much greater in value, do you think, the machine with the Brill in it would be than with the old wheel in it"?

10.

That the said court erred in sustaining the objection of the defendant in error to the following question, asked the witness Edgar Thompson on cross-examination:

"Q. Cannot you make it with much less metal, if you place both bearings within such a frame as is formed by the joining of these two ends of the metal brace to the two ends of the vertical standard"?

11.

That the said court erred in sustaining the objection of the defendant in error to the following question asked him:

"Q. Mr. Brill, you testified, if I understood you rightly,
234 that you are uncertain as to the amount that Mr. Eldridge paid you for the shop right, and was also uncertain as to the date. For the purpose of refreshing your recollection, if it will answer that purpose, I show you a dispatch from Mr. Eldridge, and ask you if it was not on the 9th day of April, 1881, that you sold him the shop right, and if the price received was not exactly one hundred dollars"?

12.

That the said court erred in sustaining the objection of the defendant in error to the following question asked him:

"Q. Mr. Brill, did you bring any suits for the infringement of your patent before your patent expired"?

13.

That the said court erred in overruling the following motion made by the plaintiff in error, at the close of the case of the defendant in error:

"Mr. KALLOCH: We desire to move the court now to instruct the jury, as to the first claim of the patent sued on, to bring in a verdict at this stage of the case for the defendant, and we make this motion upon the ground that the testimony in the case thus far shows conclusively the absolute lack of patentability and novelty of the alleged invention, and an absolute anticipation of that alleged invention, as well as to conclusively show non-infringement by the defendant of the device, and we desire at the same time to move as to second claim of the letters patent sued on, that the jury be at this stage of the case instructed to bring in a verdict for the defendant upon the same grounds, that the evidence has conclusively shown the utter want of patentability and novelty in the alleged

invention, the absolute anticipation of the device, and the non-infringement by the defendant."

14.

That the said court erred in overruling the objection of the plaintiff in error to the following question, asked the witness Gowing:

"Q. We will carry it a little further. Suppose a man did not know anything about the Dewey patent, would it require, in your judgment, invention to get up any of these crank wheels shown by the plaintiff's patent, or in the Defendant's Exhibit- 3 and 5"?

15.

That the said court erred in sustaining the objection of the defendant in error to the following question, asked the witness Bell on redirect examination:

"Q. Will you please see if, upon the diagram upon the board, and in the Dewey device, there are elements which are qualified to take up the lost motion of the mechanism better than any element in the old machine devices which you have examined"?

16.

That the said court erred in sustaining the objection of the defendant in error to the following question, asked the witness Bell on redirect examination:

"Q. Is there any less friction there, in the design on the blackboard, than there would be if there was a bearing but on one side of the wheel"?

17.

That the said court erred in sustaining the objection of the defendant in error to the following question, asked the witness Bell on redirect examination:

"Q. As a practical mechanic, can you tell the jury what the purpose of making that drawing as it is on the board was, in the designer's mind. I ask that question inasmuch as it does not show a complete sewing machine. It does not show the top, and the top of the fly-wheel is some distance above the standards which support the shaft and the adjustable mechanism"?

18.

That the said court erred in sustaining the objection of the defendant in error to the following question, asked the witness Bell on redirect examination:

"Q. Did it require the exercise of inventive genius upon your part to make that change in the diagram on that board"?

19.

That the said court erred in sustaining the objection of the defendant in error to the following question, asked the witness Bell on redirect examination:

"Q. Does the device now shown upon the blackboard, containing the elements of the Dewey device, less the stop portion, and containing the brace, top, sides, legs, pedal and the upper mechanism of the sewing machine, contain all the elements in combination of the plaintiff's device"?

20.

That the court erred in overruling the objection of the plaintiff in error to the following question, asked the witness Bell on cross-examination:

"Q. Look at the Dewey patent, the specifications, and state, without the drawings—try for one minute to forget that there are any drawings at all in that patent—tell me if you find anything in the specifications, in language or figures, that would suggest even the drawing you have made on the board"?

21.

236 That the court erred in refusing to instruct the jury at the close of the case to bring in a verdict in favor of the plaintiff in error.

22.

That the said court erred in refusing to give the following instruction to the jury, requested by the plaintiff in error:

"The inventor of an improvement cannot invoke the doctrine of equivalents to suppress other improvements which do not include his own, notwithstanding that such other improvements accomplish the same results as the patented improvements accomplish."

23.

That the said court erred in refusing to give the following instruction to the jury, requested by the plaintiff in error:

"If for any reason the jury decide that the plaintiff's patent is void their verdict should be for the defendant."

24.

That the said court erred in refusing to give the following instruction to the jury, requested by the plaintiff in error:

"Where a combination already exists of operating mechanical devices it is not invention for any person to take one or more of those devices from the combination and substitute for the device or devices so withdrawn other devices which were in common use for performing the same kind of services as the devices performed which were withdrawn from the combination, and in such cases it makes no difference whether the substituted devices made the combination operate with less friction than the original combination operated or not."

25.

That the said court erred in refusing to give the following instruction to the jury, requested by the plaintiff in error:

"When a combination of mechanical devices is once made the law conclusively presumes that skillful mechanics from a knowledge of their business know which, among all the devices that are in common use for performing the respective services which each one of the several devices in the combination respectively perform will be best adapted to the use in such combination, and no substitution of such known devices or any of them, for the similar devices which were already in the combination, will be patentable, and any patent granted for any such substitution will be void."

26.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

237 "If at the time that the patentee made his invention the adjustable bearings shown in the patent were well known and in common use in other machines other than sewing machines, and while used in such other machines could be operated so as to take up lost motion caused by the wearing away of the bearings, and also by taking up such lost motion prevent the noise occasioned by the loose journals, then the jury are to consider that any mechanic skilled in the business of making and using journal bearings could, without any invention and by virtue of his knowledge as a maker and user of journal bearings, apply those adjustable bearings in any machine where such adjustable bearings were applicable. In such case if the mechanic found in a sewing or other machine, journal bearings which were objectionable on account of their having too much friction it would be no invention on his part to remove them and supply their place with adjustable journals shown in the patent, and by so doing rid the bearings of the objectionable friction."

27.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"It is contended by the defendant that the function which the screw performs is that of carrying the bearing cone or point of the screw towards or away from the sockets in the crank with which it connects when the fly-wheel is in place. The defendant contends that in order to move that bearing point up to the socket as the parts are described in the patent, that the screw must be turned, and that when the screw is turned it will move that point in either one direction or the other; that the bearing point cannot be moved back and forth by the human hand under the patented arrangement, but that it must be moved by the screw and cannot be moved in any other manner.

If the jury find this contention of the defendant to be true, then they should find that there is no mechanical equivalent of the screws, or either of them, in the defendant's machine, unless there is some device there which will move the bearing points toward or away from the bearing sockets."

28.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"If the jury believes that the screws F and G of the patent perform the mechanical operation of moving the bearing points towards and away from the bearing sockets, they must not consider that the defendant's machine has any equivalent of those screws if there is no mechanical device in the defendant's machine which
238 moves those bearing points towards and away from the bearing sockets. If there is no way of moving the bearing points and bearing sockets towards and away from each other than to move them by the human hand then there is no mechanical equivalent of the screws in the defendant's first machine."

29.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"Using the human hand to move a part is not using a mechanical equivalent of a mechanical device which moves the same part.

The human hand is not a mechanical device within the meaning of the patent law, and it is never the mechanical equivalent of a mechanical device."

30.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"It is conceded that the second machine of the defendant had one adjusting screw, but that it did not have two of them.

The first claim of the patent is not infringed by the defendant's second machine, Exhibit 5, unless there is found in the machine not only one of the adjusting screws, but also a mechanical equivalent of the other adjusting screw.

If the functions performed by each one of the two adjusting screws was to move one of the bearing points towards and away from one of the bearing sockets, then there was no infringement of the claim by the defendant's second machine unless it contained some mechanical device which would move the inside bearing points towards and away from the inside bearing socket."

31.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"If in the defendant's machine there was no way of connecting and disconnecting the inside bearing point with the inside bearing socket other than to move one or the other by the human hand without the intervention of any mechanical device then the defendant's second machine was no infringement of the second claim of the patent."

32.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"Another one of the elements of the first claim of the patent is the arm E. The arm E is described in the patent as 'an arm E, one end of which is attached to the wheel a little below its centre, as seen in Fig. 2, while the other end which projects upwardly is in line with the axis of the wheel."

239 33.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"One of the elements called for by the first claim is the 'arm E.' In order to be the 'arm E,' it must be an arm substantially as described in the patent, and it is there described as having one end attached to the wheel a little below its centre.

The 'arm E,' therefore, which is named in the claim cannot be construed to mean a crank arm which does not have one of its ends attached to the wheel at one side of its centre."

34.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"The first claim of the patent is not infringed by either one of the defendant's machines, unless one or the other of those machines contained a crank arm which had one of its ends attached to the driving wheel at one side of its centre."

35.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"The adjustable bearings which are called for by the second claim are 'adjustable bearings as and for the purpose shown and described.' In order to be the adjustable bearings of the patent, therefore, they must be such adjustable bearings as are described in the patent, and must be capable of being used as therein described, and they must be capable of accomplishing the purposes as the adjustable bearings of the patent accomplish and by substantially the same mode of operation.

The purposes accomplished by the adjustable bearings of the patent are therein described to be to increase the ease of operating the machine, diminish the noise, and provide a means of readily adjusting the bearings of the driving or fly wheel, so that it may always run true and without shaking. The patent describes the adjustment as being made in the following manner, viz:

'Should the wheel become loose it can readily be brought to its bearings by tightening the screw-pins F, G.'

The kind of adjustable bearings described in the patent to be used are described in the patent as follows, viz:

'A screw-pin passing through the standard H, as seen at F, figures

1 and 2, has a pointed end which enters a corresponding socket in the projection D, while another similar pin, G, Fig. 1, passes through the bracket B, and engages with a socket in arm E, as seen clearly in figure 1, thus furnishing bearing to the wheel C.'

240 The second claim does not cover all and every kind of adjustable bearings. It covers only such adjustable bearings as are described in the patent, or which are substantially like those described in the patent. No other adjustable bearings are substantially like those described in the patent, unless they are capable of being adjusted by the same means. The means used for adjusting the bearings of the patent are the screw-pins F and G. If the screws are a part of the adjusting apparatus by which the bearings are adjusted, then no other adjustable bearings would be substantially the same as the adjustable bearings of the patent, unless they had either the screw or some mechanical equivalent of the screw by which to move the bearings together.

If the bearings shown in the patent cannot be adjusted when arranged in the combinations shown in the patent without using the screws F and G, then no other adjustable bearings which can be adjusted by the human hand alone, without the intervention of any mechanical device for moving the parts of the bearings together, would be the adjustable bearings of the patent, nor would they be the adjustable bearings that are covered by the claims of the patent.

The second claim of the patent calls for adjustable bearings, and not for a single adjustable bearing. The patent further states the use of both bearings for adjusting the wheel. The patent says: 'Should the wheel become loose it can be brought to its bearings by tightening the screw-pins F, G.' The second claim of the patent would not be infringed by either one of the defendant's machines, unless one or the other of them contained two adjustable bearings, each one of which must contain a screw or a mechanical equivalent of a screw, some mechanical device which would be the equivalent of the screw, that could be used as an equivalent of a screw for moving the bearing points together whenever the wheel should need adjusting.

The jury must not consider the human hand as the equivalent of a screw when used for the purpose of moving the bearing points together."

36.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"A principle, as such, cannot be patented. It is not one of the subjects for which a patent can be granted and it is not patentable. The general principle upon which two machines operate may be examined for the purpose of better determining whether or not what is patented in one of them is incorporated into the other."

241 37.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"A patentee is not entitled to appropriate the principle upon which a machine operates any further than he has for the first time developed that principle. If the patentee has only made an improvement in an existing machine, and in so doing has not changed the mode of principle of operation of the machine, then he has not developed any part of the principle of the machine, and his patent must not be construed as covering anything more than the particular changes which he has made."

38.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"Where the patentee has not made an improvement which changes the principle or mode of operation of a machine in any respect he is not entitled to appropriate or make his patent cover any mechanical equivalents or substitutes of the devices which he has applied."

39.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"In this case the patent is not for any machine as an entire machine. It is not for a sewing machine nor any improvement in a sewing machine. No sewing machine, of any kind, is shown in the drawings of the patent, nor is any claim made in the patent that covers any part or parts of a sewing machine. The specifications of the patent declares at the beginning that the patentee has 'invented a new and useful improvement in sewing-machine treadles.' The claims of the patent do not, however, refer to or cover any sewing-machine treadles, or any improvement of any nature or kind in sewing-machine treadles."

40.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"The specifications further say:

'A, figures 1 and 2, represent an ordinary sewing-machine table, and B, a bracket attached to the under side of it.'

Except in these two instances the words 'sewing machine' *is* not used in the patent at all. The claims of the patent do not mention sewing machines, and if the jury believe that the combination- covered by the claims are applicable to other machines in the same manner, and with the same effect, as they are applicable to sewing machines, they should only consider them in their general
242 character as combinations which are applicable to, and may be used with all kinds of machines to which they can be applied, and have the same effects and results follow as when they are applied to sewing machines, and the jury should not consider such combinations as applied to sewing machines alone."

41.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"Where the patented invention is for an entire machine which is entirely new, a somewhat different rule applies to the construction of the patent from the rule which applies to the constructions of patents which are for improvements only."

42.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"In this case the patent is not for an entire machine, and therefore the rules of construction which apply to new machines, and do not apply to mere improvements in an existing machine, do not apply to this case. The claims of the patent are for combinations only, and therefore the rule- which apply to the construction of this patent are the rules which apply generally to patents which are for combinations only."

43.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"If the jury believe from the evidence that the defendant has sold machines which contain one of the adjustable screws designated in the plaintiff's patent by the letters F and G, but does not believe that the defendant's machines contained the second one of such adjustable screws, or any mechanical equivalent therefor, then the jury should find that the first claim of the patent has not been infringed by the defendant, and their verdict should be for the defendant upon such first claim.

If the jury believe from the evidence that the defendant's second machine contained one of the adjusting screws F or G, but did not contain the other one of the adjusting screws, nor any mechanical equivalent of it, they should find that the second claim of the plaintiff's patent has not been infringed, and their verdict should be for the defendant upon the second claim."

44.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"One device is not the mechanical equivalent of another device unless it performs the same function, and by substantially the same mode of operation."

243

45.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"If therefore the jury believe that substantially the same combinations which are covered by the claims of the patent had been in public use in turning lathes prior to the patentee's invention, and

also believe that when so applied to turning lathes, they were used to produce the same effects and results as they produced when applied to a sewing machine, then the application of them to sewing machines was only double use of those combinations and not patentable, and the jury should find for the defendant upon this ground alone."

46.

That the said court erred in refusing to give to the jury, the following instruction, requested by the plaintiff in error:

"The damages of the plaintiff is the amount that he has lost by the infringement. If the defendant has sold machines for a larger price on account of having the plaintiff's invention attached to such machines, the plaintiff would be entitled to recover as damages the difference between the price at which the machines would have been sold without the attachment, and the price at which they did sell with the attachment.

But before the plaintiff can rely upon this rule for assessing his damages, he must first prove that the machines were sold for a larger price on account of having the attachment than they would have sold for without the attachment.

If there is no such proof in the case, the jury must not undertake to assess any damages under this rule."

47.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"Another method for assessing damages is for the plaintiff to prove that he has lost sales of his invention on account of the infringement. In order for the plaintiff to rely upon this rule, he must first prove that he has lost sales of his invention on account of the infringement, and in addition to such proof, he must also prove how much he has lost in money, on account of the loss of such sales."

48.

That the said court erred in refusing to give to the jury, the following instruction, requested by the plaintiff in error:

"Another rule for assessing damages is, for the plaintiff to prove that he had an established royalty, for which he sold to others the right to use his invention, and which others paid to him for such right. In this case the plaintiff has not proved any established royalty for the use of his invention, and the jury must not assess damages upon the basis of a royalty, for the use of the invention."

244

49.

That the said court erred in refusing to give to the jury, the following instruction, requested by the plaintiff in error:

"If the plaintiff has not proved that he has lost any money on account of the infringement of the defendant, if there has been

any such infringement, or if his testimony fails to show how much money he has lost, either on account of competition in business, or on account of not receiving the difference between some higher price which the defendant's machine sold for, on account of having the invention attached to them than they would have sold for without having it attached, then the jury must only find nominal damages, in case they find that the patent is valid, and that it has been infringed by the defendant."

50.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"Unless the proof shows that the defendant made a profit by selling the plaintiff's invention, or that the plaintiff has lost money by competition in business resulting from the infringement, the jury must find nominal damages only."

51.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"In order to produce a patentable combination there must be a co-operative action of all the several devices of which the combination is composed. The combination covered by the first claim of the patent includes as two of its elements the bracket B and the standard H. The patent does not show that either the bracket B or the standard H performs any active part whatever, but that they are stationary devices which hold the active mechanism in position."

52.

That the said court erred in refusing to give to the jury the following instruction requested by the plaintiff in error:

"If the jury believe from the evidence that the bracket B or the standard H do not coact with the other devices named in the combination so as to produce a joint effect which is due to such coaction, but believe that the results produced by such bracket or standard is the independent result of holding the bearings in place in substantially the same manner as the standard had formerly held the bearings in place, then they should find that there is no patentable combination of the standard with the bearings
245 shown in the patent, but that the assemblage of parts is an aggregation only, in which aggregation the standard performs substantially the same service that it formerly performed, and that its action has not been changed or modified on account of the change made in the bearings, if any change in the bearings has been made, by the patentee."

53.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"The driving or fly wheel is also made an element in each one of

the combinations covered by the claims of the patent. In order to make the fly or driving wheel an element in the patentable combination with the adjustable bearings, it must appear that the action of such wheel is in some way blended with the action of the adjustable bearings. If the fly or driving wheel is driven when used with the adjustable bearings just as it was driven when used with other bearings, and if such wheel is used with a band and drives the machine above it just as it formerly drove such machines when used with other bearings, then the use of the fly or driving wheel with the adjustable bearings is only an aggregation of parts and the patent is void."

54.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"If the action of the driving or fly wheel is in no way influenced or modified or changed by the action of the adjustable bearings, and if the action of the adjustable bearings is in no way influenced or modified or changed by the action of the fly-wheel, then there is only an aggregation of parts and the patent is void for this reason alone."

55.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

"It is not enough that the adjustable bearings may permit of the use of less power with which to drive the driving wheel. That would only affect the amount of power that is used at the treadle and the pitman which operates the driving wheel. If the driving wheel was formerly turned with the former bearings the same as it is turned with the adjustable bearings, and if its own action was precisely the same when it was used with the former bearings as it is when it is used with the adjustable bearings, it makes no difference whether it requires more power to produce such action of the driving wheel in one case than it did in the other case or not."

56.

That the said court erred in refusing to give to the jury the following instruction, requested by the plaintiff in error:

246 "The question is not whether it took more power in one case than it did in the other case or not, but the question is as to whether the action of the driving wheel is changed or modified or in any way affected by the action of the adjustable bearings so that it performs, or assists in performing or accomplishing, any result which it did not perform, or assist in performing or accomplishing, when it is used with the former bearings. If it does not, then there is no new patentable combination formed by substituting the adjustable bearings for the other bearings that were formerly in use, and the patent is void."

57.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"If the device used by the defendant has combined in it elements or devices which are mechanical equivalents of the elements shown in the patent, and which accomplish the purposes of the patented invention, then the fact that the defendant only used one screw instead of two, putting the other end of the arm or crank upon a point centre as shown in the exhibit, the variation would not be material."

58.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"In regard to the law of equivalent devices, the court instructs you that when in mechanics one device does a particular thing, or accomplishes a particular result, every other device known or used in mechanics, which skillful and experienced workmen know will produce the same work, or do the same particular thing, is a known mechanical substitute for the first device."

59.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"Patentees of inventions consisting merely of a combination of old ingredients are entitled to equivalents, by which is meant that the patent in respect to each of the respective ingredients comprising the invention covers every other ingredient, which in the same arrangement of the parts, will perform the same function, if it was well known as a proper substitute for the one described in the specification at the date of the patent.

A party who merely substitutes another old ingredient for one of the ingredients of the patented combination, is an infringer if the substitute performs the same function as the ingredient for which it is so substituted, and it appears that it was well known at the date of the patent that it was adaptable for that use."

247 60.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"A mechanical equivalent means something that does substantially the same thing in substantially the same way. Where a patented device is attempted to be evaded by a change in its construction, the change must be the result of the mind, of genius, of invention, in which there is something more than mere mechanical skill and ingenuity. A change in the arrangement and construction is not substantial unless there is embodied in it, over and beyond the skill of the mechanic, that element of the mind which is to be found in every machine or improvement that is the proper subject of a patent."

61.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"If you believe that the arrangement of the devices shown in the exhibit of the plaintiff's machine, accomplished the same result in substantially the same way, or by the same or substantially the same devices as described in the patent, you must find that the first claim of the patent is infringed."

62.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"In regard to the second claim the court instructs you that it is also a combination claim, but it is broader and covers more ground than the first claim already considered.

The second claim is a combination of a driving or fly wheel with adjustable bearings. The same general rules apply to the construction of this claim that the court has given in regard to the first claim, though it does not embody so many elements. To infringe this claim there must be a driving or fly wheel, and that driving or fly wheel must swing or operate in adjustable bearings and substantially in the manner described."

63.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"It is a familiar rule that the copy of the principle or mode of operation described in the patent is an infringement of it, and that it is only ingenious diversities of form and proportion, presenting the appearance of something unlike the thing patented, which gives rise to question of non-infringement. So long as the patentee's ideas are found in the construction and arrangement, no matter what may be its form, or shape, or appearance, the party using it is ap-
248 propriating the patented invention, and is an infringer. An infringement takes place whenever a party avails himself of the invention of the patentee, without such variation as will constitute a new discovery, and when it involves substantial identity."

64.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"The word 'substantial,' as applied to questions of infringement of patents, is not susceptible of an exact definition. The law looks more to the substance of things than to their forms. It is not necessary, to constitute infringement, that the party should work by the specifications of a patent. Where the alleged infringing machine is substantially the same or operates in the same or substantially the same way to produce the same result as that described in the patent, the two machines must be in principle the same. The same result must be understood to be the same kind of result, though

there may be a difference in degree or extent. The result is the same, according to this definition, whether one produces more than the other or not, if the result is to make the same article. If the result is the same in kind, it is not necessary that it shall be the same in degree."

65.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"The principle of a machine means the peculiar mode, manner or device by which the proposed result or effect is produced. In other words, the combination of powers by which a definite result is produced, is called the principle. And if the principle is the same, and the effect is similar, in contemplation of law the machines are identical."

66.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"With reference to the patent that was obtained by defendant, assignee of Miller and Diehl, covering these exhibits offered, the court instructs you that the issuance of this latter patent, the patent to the defendant, does not necessarily prevent the device described therein from infringing the plaintiff's patent. The jury understand that, that the mere fact of the issuance of that patent does not. The defendant, or any other person, had the right to improve upon the devices described in the plaintiff's patent, and to receive from the Government of the United States a patent for such improvements; but the owner of this patent would have no right to use the prior patented devices without the consent of the original patentee.

Nor would the original patentee have the right to use the
249 improvements described in the latter patent, without the consent of the latter patentee. It does not follow, therefore, that because the defendant obtained the patent referred to, that the devices made and sold by defendant, as shown in Exhibits 2 and 3, do not infringe the plaintiff's patent. The question for you to determine is whether or not the devices sold by the defendant infringed the plaintiff's patent, under the rules of law given by the court, and if they do it makes no difference whether the defendant has a patent for them or not."

67.

That the said court erred in giving the following instruction during the course of the charge to the jury:

"If you believe from the evidence that the plaintiff made and sold these patented devices for three dollars each, and that they only cost him fifty cents each, thereby leaving him a profit of $2.50 each, this forms a basis from which you may estimate the damages in this case."

68.

That the said court erred in not instructing the jury that the first claim of the patent of the defendant in error, and sued upon, was void, for want of any patentable invention.

69.

That the said court erred in not instructing the jury that the second claim of the patent of the defendant in error, sued upon, was void, for want of any patentable invention.

70.

That the said court erred in not instructing the jury that there had been no infringement by the plaintiff in error upon the first claim of the patent of the defendant in error, sued upon.

71.

That the said court erred in not instructing the jury that there had been no infringement by the plaintiff in error upon the second claim of the patent of the defendant in error, sued upon.

Wherefore, the said Singer Manufacturing Company, plaintiff in error, prays that the judgment of the circuit court of the United States for the northern district of California, be reversed, and that the said circuit court be directed to grant a new trial herein.

WHEATON, KALLOCH & KIERCE, AND
F. M. HUSTED,
Attorneys for Plaintiff in Error, Defendant in the Lower Court.

(Endorsed:) Filed March 28, 1892. L. S. B. Sawyer, clerk.

250 *Order Fixing Amount of Bond and Staying Proceedings.*

At a stated term, to wit, the February term, A. D. 1892, of the circuit court of the United States of America, of the ninth judicial circuit, in and for the northern district of California, held at the court-room, in the city and county of San Francisco, on Monday, the 28th day of March, in the year of our Lord one thousand eight hundred and ninety-two.

Present: The Honorable W. W. Morrow, acting circuit judge.

A. BRILL, Plaintiff,
vs.
THE SINGER MANUFACTURING COMPANY, Defendant. } No. 11296.

On motion of F. J. Kierce, Esq., counsel for the defendant above named, it is ordered that the supersedeas bond on writ of error taken by the defendant above named, from the judgment for damages and costs in said cause, in favor of plaintiff, in the U. S. circuit court, of the northern district of California, to the U. S. circuit court of appeals for the ninth circuit, be and the same is hereby

fixed at the sum of fifteen thousand dollars; and it is further ordered that upon the giving of said bond, all further proceedings in said circuit court be stayed, until the determination of said writ of error upon said appeal.

Bond on Writ of Error.

Know all men by these presents that we, C. C. Volberg and O. T. Lemen, are held and firmly bound unto A. Brill in the full and just sum of fifteen thousand dollars, to be paid to the said A. Brill, his certain attorneys, executors, administrators or assigns; to which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, jointly and severally, by these presents.

Sealed with our seals and dated this 29th day of March, in the year of our Lord one thousand eight hundred and ninety-two.

Whereas lately, at a circuit court of the United States for the northern district of California, in a suit depending in said court between A. Brill, plaintiff (and defendant in error), and The Singer Manufacturing Company (a corporation), defendant (and plaintiff in error), a judgment was rendered against the said defendant (and plaintiff in error), and the said Singer Manufacturing Company has obtained from said court a writ of error, to reverse the judgment in the aforesaid suit, and a citation directed to the said A. Brill
251 is about to be issued, citing and admonishing him to be and appear at a United States circuit court of appeals, for the ninth circuit, to be holden in San Francisco, in the State of California:

Now, the condition of the above obligation is such, that if the said Singer Manufacturing Company shall prosecute its writ of error to effect, and answer all damages and costs if it fail to make its plea good, then the above obligation to be void; else to remain in full force and virtue.

Witness our hands and seals the day and year first above written.

CH. C. VOLBERG. [SEAL.]
O. T. LEMEN. [SEAL.]

STATE OF CALIFORNIA, } ss:
City and County of San Francisco, }

On the twenty-ninth day of March, A. D. one thousand eight hundred and ninety-two, before me, W. F. Swasey, a notary public in and for the city and county of San Francisco, State of California, residing therein, duly commissioned and qualified, personally appeared C. C. Volberg and O. T. Lemen, known to me to be the individuals described in, and whose names are subscribed to, and who executed the annexed instrument, and they acknowledged to me that they executed the same.

In witness whereof, I have hereunto set my hand and affixed my

official seal, at my office, in said city and county of San Francisco, the day and year last above written.

W. F. SWASEY,
Notary Public.

[NOTARIAL SEAL.]

UNITED STATES OF AMERICA,
Northern District of California,
City and County of San Francisco, } ss:

C. C. Volberg and O. T. Lemen, being duly sworn, each for himself, deposes and says that he is a freeholder in said district, and is worth the sum of fifteen thousand dollars, exclusive of property exempt from execution, and over and above all debts and liabilities.

CH. C. VOLBERG.
O. T. LEMEN.

Subscribed and sworn to before me this 29th day of March, A. D. 1892.

[NOTARIAL SEAL.]

W. F. SWASEY,
Notary Public.

Form of bond and sufficiency of sureties approved this 29th day of March, 1892.

(Signed) WM. W. MORROW, *Judge.*

252 (Endorsed): Filed March 29, 1892. L. S. B. Sawyer, clerk, by W. B. Beaizley, deputy clerk.

Certificate to Transcript.

In the Circuit Court of the United States, Ninth Judicial Circuit, Northern District of California.

A. BRILL
vs.
THE SINGER MANUFACTURING COMPANY. } No. 11296.

I, L. S. B. Sawyer, clerk of the circuit court of the United States of America, of the ninth judicial circuit, in and for the northern district of California, do hereby certify that the foregoing four hundred and two written and printed pages, numbered from 1 to 402, inclusive, to be a full, true and correct copy of the record and of the proceedings in the above and therein entitled cause, and that the same together constitute the return to the annexed writ of error.

In testimony whereof I have hereunto set my hand and affixed the seal of said circuit court this 9th day of April, 1892.

[SEAL.]

L. S. B. SAWYER,
Clerk U. S. Circuit Court, Northern District of California.

Writ of Error.

UNITED STATES OF AMERICA, *ss:*

The President of the United States to the honorable the judge of the circuit court of the United States for the northern district of California, Greeting:

Because in the record and proceedings, as also in the rendition of the judgment of a plea which is in the said United States circuit court, before you, or some of you, between The Singer Manufacturing Company (a corporation), plaintiff in error, and A. Brill, defendant in error, a manifest error hath happened, to the great damage of the said The Singer Manufacturing Company (a corporation), plaintiff in error, as by its complaint appears—

We, being willing that error, if any hath been, should be duly corrected, and full and speedy justice done to the parties aforesaid in this behalf, do command you, if judgment be therein given, that then under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the United States circuit court of appeals for the ninth circuit, together with this writ, so that you have the same at the city of San Francisco, in the State of California, on the 28th day of April next, in the said circuit court of appeals, to be then and there held, that the record and proceedings aforesaid being inspected, the said circuit court of appeals may cause further to be done therein to correct that error, what of right, and according to the laws and customs of the United States, should be done.

253

Witness, the Honorable Melville W. Fuller, Chief Justice of the Supreme Court of the United States, the 29th day of March, in the year of our Lord one thousand eight hundred and ninety-two.

[SEAL.] L. S. B. SAWYER,
Clerk of the United States Circuit Court for the Ninth Circuit, Northern District of California,
By W. B. BEAIZLEY,
Deputy Clerk.

Allowed by—

WM. W. MORROW,
U. S. Dist. Judge, Northern District of Cal.

(Endorsed.)

Service of the within writ of error, and receipt of a copy thereof is hereby admitted this 30th day of March, 1892.

SCRIVNER & SCHELL AND
C. W. M. SMITH,
Attorneys for Plaintiff and Defendant in Error.

Filed March 30, 1892.

L. S. B. SAWYER,
Clerk U. S. Circuit Court, Northern District of California.

The answer of the judges of the circuit court of the United States of the ninth judicial circuit, in and for the northern district of California.

The record and all proceedings of the plaint whereof mention is within made, with all things touching the same, we certify under the seal of our said court, to the United States circuit court of appeals for the ninth circuit, within mentioned at the day and place within contained, in a certain schedule to this writ annexed as within we are commanded.

By the court:

[SEAL.] L. S. B. SAWYER, *Clerk.*

Citation.

UNITED STATES OF AMERICA, *ss:*

The President of the United States to A. Brill, Greeting:

You are hereby cited and admonished to be and appear at
254 a United States circuit court of appeals for the ninth circuit, to be holden at the city of San Francisco, in the State of California, on the 28th day of April next, pursuant to a writ of error filed in the clerk's office of the circuit court of the United States, for the northern district of California, wherein The Singer Manufacturing Company (a corporation) is plaintiff in error, and you are defendant in error, to show cause, if any there be, why the judgment rendered against the said plaintiff in error as in the said writ of error mentioned should not be corrected, and why speedy justice should not be done to the parties in that behalf.

Witness, the Honorable Wm. W. Morrow, United States district judge for the northern district of California, this 29th day of March, A. D. 1892.

WM. W. MORROW,
U. S. District Judge, Northern District of California.

(Endorsed.)

Service of the within citation, and receipt of a copy thereof, admitted this 30th day of March, 1892.

SCRIVNER & SCHELL AND
C. W. M. SMITH,
Attorneys for Plaintiff and Defendant in Error.

Filed March 30, 1892.

L. S. B. SAWYER,
Clerk U. S. Circuit Court, Northern District of California.

255 In the United States Circuit Court of Appeals for the Ninth Circuit.

THE SINGER MANUFACTURING CO., Plaintiff in Error,
vs.
A. BRILL, Defendant in Error.

Error from the circuit court of the United States for the northern district of California.

Wheaton, Kalloch, Kierce, and F. M. Husted, for plaintiff in error.

J. J. Scrivner, George W. Schell, and C. W. M. Smith, for defendant in error.

Before McKenna and Gilbert, circuit judges, and Knowles, district judge.

256 GILBERT, *Circuit Judge:*

A. Brill brought an action at law against the Singer Manufacturing Co. to recover damages for infringement of United States letters patent No. 128,460, bearing date July 2, 1872, for an improvement in sewing-machine treadles.

The answer of the defendant pleaded the general issue, and notice was given of special matters claimed to be in anticipation of the patent. The case was tried by a jury, who returned a verdict for plaintiff, fixing his damages at ten thousand and eight dollars and thirty cents ($10,008.30), and judgment was entered for that amount. Although the bill of exceptions contains numerous assignments of error, both as to the ruling of the court upon the testimony and the instructions to the jury, the argument of counsel for the defendant brought to the consideration of the court but two principal questions, to wit: whether the circuit court erred in not directing a verdict for the defendant, first, upon the ground that the plaintiff's patent was void for want of novelty, and, second, because there was no evidence of infringement.

The plaintiff's patent is for an improvement in sewing-machine treadles. The object of his invention, as stated in his patent, is to increase the ease of operating the machine, diminish the noise, and provide a means of readily adjusting the bearing of the driving or fly wheel so that it may always run true and without shaking.

257 To accomplish these results the plaintiff's improvement combines mechanical devices, none of which was new. His specifications describe a fly-wheel or driving wheel having upon the one side at the center a short projection or axle; upon the other side an "arm" attached to the wheel a short distance from the center, with a crank returning to the center, with a short projection or axle at the end of the crank. The wheel is held in place by pointed screws passing respectively through one of the standards of the sewing machine and through a bracket, which is attached beneath the sewing-machine table and extends downward to a point

opposite the center of the wheel. The wheel has conical sockets, in which the points of the screws are inserted and adjusted.

The claims of the patent are two: The first is for a combination including as separate and distinct elements the wheel "C," arm "E," bracket "H," standard "H," and screws "G G;" the second claim is for the combination with "a driving or fly wheel of adjustable bearings."

On the trial the defendant put in evidence several prior patents claimed to be anticipatory of the plaintiff's patent, and also as showing the state of the art in that class of machinery at and prior to the date of plaintiff's invention. One of these prior patents shows in the drawing a combination of a fly-wheel and crank shaft and adjustable screws passing through the standards at either end of the machine. It is a patent for a sewing-machine brake, and its purpose is to make it impossible for the fly-wheel to turn backward. It contains no description of the adjustable screws,
258 and no claim is made for their use in combination or otherwise. The drawings, however, plainly show that the shaft is supported and turned upon screw points similar to those employed by plaintiff. Another of these older patents is for a turning lathe, in which a combination of the fly-wheel with a crank shaft and adjustable screws upon the ends of the shaft plainly appear. A third is for a fly-wheel with shortened axle, one end of which is supported by a bracket, but no adjustable screws are employed.

Owing to the existence of these prior patents and the state of the art, as evidenced by the plaintiff's second claim for a combination with "a driving or fly wheel of adjustable bearings," under his own admissions is clearly without merit. The validity of the first claim depends upon whether or not the plaintiff brought together the mechanical devices which he claims in a new and useful manner or in a shape or form which produced results different from those which had been produced before.

This question was submitted to the jury under proper instruction from the court, and we have not the power to disturb their verdict.

It is urged on behalf of the defendant that the court below should have instructed the jury to return a verdict for the defendant, and that the refusal so to instruct is error for which this court may reverse the judgment.

Since the adoption of the seventh amendment to the Constitution, declaring that no fact tried by a jury shall be otherwise re-
259 examined in any court of the United States than according to the rules of the common law, the Supreme Court has repeatedly affirmed the doctrine that upon writ of error the Federal courts are confined to the consideration of exceptions to the evidence and to the instructions given or used to the jury, and that they have no concern with questions of fact or the weight to be given to the evidence which was properly admitted.

Parsons *vs.* Bedford, 3 Pet., 446.
Barreda *vs.* Silsbee, 21 How., 167.
Railroad Co. *vs.* Fraloff, 100 U. S., 31.
Ætna Life Ins. Co. *vs.* Ward, 140 U. S., 91.

Where there is any evidence whatever to go to the jury upon an issue of fact the refusal of the court to instruct a jury to return a verdict for the defendant is not reviewable in this court. There is nothing in the case before the court to make it an exception to the rule. The defendant relies upon Heald *vs.* Rice, 154 U. S., Torrent Arms Co. *vs.* Rodgers, 112 U. S., 659, and Fond Du Lac Co. *vs.* May, 137 U. S., 395, as sustaining a contrary doctrine.

In Heald *vs.* Rice the action was brought for alleged infringement of reissued letters patent. One of the defences relied upon was that the reissued letters described an invention different from that covered by the original patent. This was a question of law for the court to be determined by a comparison of the two instruments. The decision of the Supreme Court went no further than to hold that the reissued letters patent should have been held to be
260 void, and that the jury should have been instructed to return a verdict for the defendant. To the same effect was Torrent Arms Co. *vs.* Rodgers.

In the case of Fond Du Lac Co. *vs.* May, the Supreme Court expressed the opinion that the court below should have directed a verdict for the defendant, and that the judgment must be reversed, but expressly based the decision upon the ground that the patent was void. The patent in that case was for "an improvement in the construction and operation of prisons." The invention was claimed to consist in the interposition of a grating between the jailer and the prisoner at every stage of opening and closing the cell doors. Every element of the combination was admitted to be old. The court held upon the plaintiff's own testimony that the patent was void for the reason that the interposed grating was made part of the combination solely for the protection of the keeper and had nothing to do with locking or unlocking the doors, and that the mechanical devices adopted to produce that result acted precisely the same without the grating as with it. In other words, the court held that there was no patentable combination between the grating and the devices.

Neither of those decisions is a precedent for the case under consideration. There was nothing upon the face of plaintiff's patent to show that it was invalid. The question of the novelty and utility of the plaintiff's invention were not questions of law to be determined by the court, but were issues of fact to be submitted to the jury. It cannot be said that there was no evidence to support the verdict.

261 The plaintiff's invention, if any there was, consisted in shortening or dispensing with the wheel shaft, which, in combination with adjustable screws, had before his invention extended from one standard of the machine to the other. He thus brought the adjustable supports of the wheel nearer together, dispensing with a considerable amount of material which could only add to the weight, the friction, and the cost, and bringing the point of application of the treadle bar to a central position between the two points of support of the wheel, thereby increasing the ease of operation of the machine. It may be conceded that the plaintiff's combination approaches very closely the line which separates that which is

patentable from that which is not, and that the amount of invention involved in it is small. The patent, however, was *prima facie* evidence of its own validity, and the burden of proof was upon the defendant to establish its want of novelty.

Centrell *vs.* Wallick, 117 U. S., 690.
Smith *vs.* Goodyear, 93 U. S., 486.
Lahnhuter *vs.* Holthaus, 105 U. S., 94.

There was evidence that the plaintiff's machine was used to a very considerable extent by manufacturers, that the plaintiff sold numerous shop rights for its use, and that he manufactured and sold a number of his wheels with their adjustable bearings. There were witnesses who testified to the novelty and the utility of his invention. There is testimony that the wheels in use prior to his in-
262 vention were unsatisfactory; that they were difficult to operate and were noisy in operation, and that a considerable amount of attention was bestowed upon the question of their improvement during a period of several years antedating his patent. All these facts may be taken into consideration in a doubtful case.

Toplif *vs.* Toplif, 145 U. S., 164.
Loom Co. *vs.* Higgins, 105 U. S., 591.
Smith *vs.* Goodyear Dental Vulcanite Co., 93 U. S., 495.

There was evidence also of infringement by the defendant, and that question was properly submitted to the jury under correct instructions from the court. The patent under which the defendant was manufacturing wheels when the action was commenced was issued February 17th, 1880. It is a patent for "an improvement in band-wheel bearings for sewing machines." The specifications show that the result sought to be accomplished thereunder were substantially the same that are arrived at in the plaintiff's patent, namely, "to do away with the rattling of the band wheel and to reduce the friction; also to simplify and condense the parts, lessening the cost and avoiding the complications of the anti-rattling journals in use."

It is claimed that the combination used in the defendant's patent differs essentially from that covered by the plaintiff's patent in several distinct particulars—first, that the defendant dispenses
263 with the bracket; second, that it dispenses with the arm "E," which is attached to plaintiff's wheel and made a part of his combination; third, that instead of two adjustable screws the defendant uses but one, and in the machines manufactured under its patent prior to 1886 it used no adjustable screw whatever.

The plaintiff's patent being a patent for a combination of old devices, the question of the infringement depended upon whether or not the changes from that combination adopted in defendant's wheel were merely changes in form or such as arose from the substitution of equivalents.

The defendant had the right to make improvements upon the plaintiff's combination, and defendant's patent cannot be held to be an infringement if it presents a new combination of the elements

that are found in plaintiff's patent or substitutes for one or more of the same a new ingredient performing a new function; but the changes adopted in the defendant's device were evidently found by the jury to be merely formal.

The jury must have found that by substituting one screw or an adjustable slide or lug for the two adjustable screws of plaintiff's patent the defendant accomplished all the results of that feature of plaintiff's combination by an equivalent device, and that the deflection of the defendant's axle to form the crank is but a change in form from the plaintiff's arm "E," which is attached to the side of the wheel, and that the defendant's brace brings the point of support of the wheel to the same relative position it would occupy if the plaintiff's bracket were used. There was evidence before
264 the jury to sustain this view. There was testimony to the effect that all of the devices employed by the defendant were the same as plaintiff's devices, with the exception of slight changes in form, which performed no new functions and which accomplished all the results attained by the plaintiff, with no improvements in operation and no perceptible advantage in construction or cost, and that it was wholly immaterial whether there were two adjustable screws or one adjustable screw or an adjustable lug; whether the treadle were attached to an arm affixed to the wheel out of its center or to an axle passing through the center and deflected away therefrom to form the treadle crank, or whether the support were a brace or a bracket.

In short, the jury must have found that the improvement or invention of plaintiff, if any there was, consisted in its essential features in combining the advantage of adjustable screws, whereby friction and noise were lessened and opportunity was afforded to adjust and take up lost motion, together with an axle so shortened as to leave only length for support upon both sides of the wheel and room between for the central and even operation of the treadle crank, and that these are likewise the essential features of the defendant's wheel. There being no error in the rulings or charge of the court, the judgment must be affirmed with costs to the defendant in error.

Endorsed: Filed Jan. 30, 1893. F. D. Monckton, clerk.

265 United States Circuit Court of Appeals for the Ninth Circuit.

THE SINGER MANUFACTURING COMPANY, Plaintiff in Error, vs. A. BRILL. } No. 49. October Term, 1892.

In error to the circuit court of the United States for the northern district of California.

This cause came on to be heard on the transcript of the record from the circuit court of the United States for the northern district of California, and was argued by counsel.

On consideration whereof it is now here ordered and adjudged by this court that the judgment of the said circuit court in this cause be, and the same is hereby, affirmed, with costs, and the cause is remanded to said circuit court for such execution and further proceedings as may be necessary in accordance with the opinion of this court.

Endorsed: Filed Jan. 30, 1893. F. D. Monckton, clerk.

266 At a stated term, to wit, the October term, A. D. 1892, of the United States circuit court of appeals for the ninth circuit, held at the court-room, in the city and county of San Francisco, on Thursday, the 4th day of May, in the year of our Lord one thousand eight hundred and ninety-three.

Present: The Honorable William B. Gilbert, circuit judge; the Honorable Thomas W. Hawley, district judge.

THE SINGER MANUFACTURING COMPANY, Plaintiff in Error,
vs.
A. BRILL. } No. 49.

On motion of Wheaton, Kalloch and Kierce, Esqs., counsel for the plaintiff in error herein—

It is ordered that the issuance of the mandate herein to the court below be, and the same is hereby, stayed for the period of sixty days from date.

267 I, Frank D. Monckton, clerk of the United States circuit of appeals for the ninth circuit, do hereby certify the foregoing two hundred and sixty-six pages, numbered from 1 to 266, inclusive, to be a full, true, and correct copy of the printed transcript of record, opinion, and judgment of the court, and the order of the court staying the issuance of mandate, in the cause entitled Singer Manufacturing Company, plaintiff in error, *vs.* A. Brill, as the originals thereof remain of record in my office.

Attest my hand and the seal of said United States circuit court of appeals, at San Francisco, this 20th day of May, A. D. 1893.

[Seal United States Circuit Court of Appeals, Ninth Circuit.]

F. D. MONCKTON, *Clerk.*

268 [Endorsed:] Exhibit "A." No. ——. U. S. circuit court of appeals for the ninth circuit. —— *vs.* ——.

269 "EXHIBIT B."

No. 49.

United States Circuit Court of Appeals for the Ninth Circuit.

THE SINGER MANUFACTURING COMPANY, Plaintiff in Error,
vs.
A. BRILL, Defendant in Error.

Brief of Plaintiff in Error.

M. A. Wheaton, I. M. Kalloch, F. J. Kierce, F. M. Husted, counsel for plaintiff in error.

270 United States Circuit Court of Appeals for the Ninth Circuit.

THE SINGER MANUFACTURING COMPANY, Plaintiff in Error,
vs.
A. BRILL, Defendant in Error.

Brief of Plaintiff in Error.

In the court below A. Brill was the plaintiff and The Singer Manufacturing Company was the defendant. As the record refers to the parties as plaintiff and defendant, we will refer to them in this brief in the same way, calling Mr. Brill the plaintiff, and The Singer Manufacturing Company the defendant.

The action was brought to recover damages for an alleged infringement of U. S. letters patent No. 128,460, bearing date July 2d, 1872, and granted to the plaintiff, A. Brill, for an alleged "improvement in sewing-machine treadles," as the specifications of the patent state. The claims of the patent, however, say nothing about sewing machines or sewing-machine treadles. The patent is in the record between pages 10 and 13. It expired in July, 1889, and the action is at law. The complaint is in the usual form, and the answer pleads the general issue. Notice of special matters that were in anticipation of the patent was duly given. Record, pages 6 and 7.

The action was tried by a jury. The verdict was for the plaintiff, the damages being fixed at ten thousand and eight dollars and thirty cents. Judgment was entered for this amount against the defendant. Record, pages 8 and 9.

The defendant duly filed a bill of exceptions, and the case is brought to this court by writ of error.

The bill of exceptions is in the record, beginning on page 10 and ending on page 231. All of the testimony taken on the trial of the action is contained in the bill of exceptions.

There were sixty-eight exceptions taken by the defendant. The number "ten" is duplicated in enumerating the exceptions
271 in the record, and hence the last exception appears enumerated as 67, when it would have been 68 had the count been

kept. We will, however, refer to the exceptions by the numbers given them in the record.

Six of the exceptions are taken to the overruling of defendant's objections to testimony. Eleven of them are taken to the sustaining of plaintiff's objections to questions asked witnesses by the defendant's counsel. Three of the exceptions were taken to the refusal of the court to strike out certain evidence. The exception numbered "thirteen" in the record was taken to the refusal of the court to instruct the jury to find a verdict for the defendant, which motion was made at the close of the plaintiff's testimony. The twenty-first exception was taken to the refusal of the court to give the same instruction at the close of all the testimony taken in the case. All of the remainder of the exceptions relate to the giving or the refusing to give instructions to the jury.

Our assignments of error are seventy-one in number. They are contained in the printed record, beginning on page 232 and ending on page 249. We refer the court to the assignment of errors as thus shown in the record, without repeating them at length in this brief.

We rely upon, and hereby specify as the errors relied upon by us on the hearing of this cause, the several errors covered by the said assignments of error above referred to in the record. Many of those assignments of errors cover substantially the same questions and may be presented under one head in this argument. To reprint each error relied upon here would therefore make much unnecessary labor both for us and for the court. For this reason we trust that the court will not object to our specifying our errors by referring to the assignment of errors contained in the record as we have done.

Argument.

The patent sued upon in this action is very short. Record, page 11. The heading of the specifications states it to be for an "improvement in treadles for sewing machines." Yet in the entire description of the invention contained in the specifications the only reference to or mention made of "treadles" is contained in the following quotation, viz: "To the arm E is attached the ordinary pitman, not shown, which is connected with the usual treadles, not shown."

The only time that a sewing machine is mentioned in the descriptive part of the invention in the patent is where it occurs in the following quotation, viz: "A, Figs. 1, 2, represents an ordinary sewing-machine table."

272 As a matter of fact, the invention has no relation to sewing-machine treadles, nor has it any more relation to sewing machines than it has to turning lathes or any other machine that is run by a crank belt wheel. What is described as the invention in the patent is a belt wheel having a crank of a peculiar construction, and which is sustained in its position and revolves upon pointed center bearings, which are used instead of the more ordinary journals.

The peculiarity of the crank consists in having the arm, which is the wrist pin of the crank, placed at one side of the center of the belt or driving wheel, and attaching a crank arm to the outer end of the wrist-pin arm. In this way the combination operates precisely the same as an ordinary crank shaft, and differs from one but very slightly in construction. The wrist-pin crank arm in the patent is indicated by the letter E, and it is mentioned in the first claim of the patent as the "arm E."

The defendant does not use the peculiar form of crank described in the patent, but uses only an ordinary crank shaft, that has its ends pointed, and uses them as conical bearings.

In the patent the center or pointed conical bearings are furnished in the shape of pointed screws, one of which passes through a bracket that is suspended from the table above for the express purpose of furnishing a support for the pointed screw, and the other passes through a standard which is a part of the frame that supports the table above. The screw or thread parts of the pointed screws constitute adjusting devices. By turning those screws one way or the other the wheel and crank can be moved to the right or left. By turning either one of the screws its point will be either loosened from or tightened against the inside of the orifice in the end of the crank into which it enters for sustaining the wheel in its position.

The patent has but two claims, and they are both combination claims, and nothing else. The first is for a combination that includes as separate and distinct elements "the wheel C, arm E, bracket B, standard H and screws F G." The second claim is for the combination with "a driving or fly wheel of adjustable bearings."

Neither of the claims mention either a sewing machine or a sewing-machine treadle.

The defendant put in evidence as matters anticipatory of the Brill patent, and also as showing the state of the art in that class of machinery at and prior to the time of the alleged invention, several ancient patents. One of these patents was granted to A. L. Dewey, August 7th, 1866, for a sewing-machine brake. Although the patent was for the brake, the drawings of the patent showed a crank shaft
273 that was carried and sustained in its position by exactly the same kind of pointed screws as was the crank in Brill's patent. Mr. Brill himself testified that they were the same and operated in the same way.

Another patent so put in evidence was a patent granted to S. Presbrey, July 26th, 1832. Record, pages 35 to 37. The drawings are between pages 34 and 35. This patent was for a method of truing, equalizing and finishing the ends of spools or bobbins used in spinning. In this patent a turning lathe is described, which has two cranks and a driving belt wheel that is carried and sustained by pointed screws used in exactly the same way as they are used in the plaintiff's patent.

Also, a patent to Giles Dayton and Andrew Mallory, bearing date April 27th, 1832, for a gauge lathe. Record, pages 37 to 39. The

patent covers a mechanism for turning rods or whips to any size, and made tapering if desired. The device is called in the specifications an "engine." The patent says, "This engine is readily attached to any common turning lathe," etc. In the drawings is shown a turning lathe with two cranks driven by treadles and foot power, with a driving pulley that is carried and sustained in place by pointed screws, just as is the plaintiff's driving wheel and crank in his patent.

Mr. Brill's patent states the object of his invention, as follows: It says, "The object of my invention is to increase the ease of operating the machine, diminish the noise, and provide a means of readily adjusting the bearings of the driving or fly wheel, so that it may always run true and without shaking."

Also, on page 15 of the record, Mr. Brill states the object to be accomplished by his invention as follows: "The object of my invention is to make a sewing machine run very much easier than it has run; and in the second place to make this wheel (indicating) adjustable when it gets loose, so there was a means readily there for its adjustment, so that anybody, a lady, or anybody, could screw up one of these screws and take up the lost motion, and so that it would not make any noise, and be perfectly satisfactory to everybody."

The testimony of the plaintiff all through shows that the foregoing benefits were all that the invention accomplished. There is so much of this testimony that the court cannot help seeing that this is so, without reference being made to all of the particular parts. In fact, there is very little conflict of testimony as to facts. The testimony in which there is any considerable conflict is that which is in the nature of expert opinions. It is true that we claim that Mr. Brill has testified extravagantly as to his invention having gone into extensive use and becoming known as the "Brill wheel" among all the sewing-machine fraternity, and that we have contradicted this part of his testimony by an overwhelming amount of testimony and a great number of witnesses, and as we think have completely discredited Mr. Brill as a witness.

274 The principle questions involved are these: First, is Brill's patent a valid patent?—and this turns mainly upon the question as to whether there could be any invention in taking the pointed screws from other sewing machines and turning lathes, and putting them in the running driving mechanism of a sewing machine in the particular combination of devices claimed in the patent; and, second, if there was any patentable invention in so doing, did the defendant infringe?

The plaintiff's patent is in evidence, and shows for itself what it is. The other patents of dates long prior thereto showing the same pointed screws used for the same purposes and accomplishing precisely the same results were put in evidence, and they show for themselves what they are.

It was not claimed that the defendant infringed the patent in any way other than by selling machines which contained the invention. The defendant had sold two kinds of machines at different dates. A specimen from each one of those two kinds of machines was put in

evidence by the plaintiff, and was admitted by the defendant to be such specimen, and neither party claimed or asserted in any way that the defendant had sold any other kinds of machines that could be infringements of the patent. Those two specimens, confessedly showing the two kinds of machines which the defendant had sold so far as the patent applied to them, showed for themselves whether they contained the patented combinations of the patent or not.

Except as it affected the question of damages, it ought to have made no difference whether Mr. Brill told the truth or not when he asserted that his invention had become universally known as the Brill wheel. This alleged fact, whether it was true or not true, could not change the legal construction or effect of his patent, nor the prior state of the art, nor make a patentable invention of mere ordinary mechanical application or construction, and could not change the legal effect of the anticipatory undisputed matter that was put in evidence.

The great mass of testimony in the record, consisting so largely of so-called expert testimony, but most of which constitutes but a clumsy burlesque on expertness, ought never to have been allowed in the case. Take, as an example, the plaintiff's own testimony, in which he mingles expert opinions with statements of alleged facts with about equal recklessness. As, for instance, on pages 15, 19 and 27, he in the most positive manner and language states that there was nothing at that time (referring to the date of his patent) similar to his wheel; that there was no crank wheel in existence at all; that there was no wheel in any sewing machine made at that time having point centers like his; that there was no sewing machine at that date having a crank wheel with point centers; that there
275 was no sewing machine with a crank wheel whereby the lost motion could be taken up at all; that there was no device in use for taking up lost motion of the wheel of a sewing machine; that there was no sewing machine in existence at that time which possessed adjustable bearings with the fly-wheel substantially as shown in his patent; that he "was the first man that got out that wheel, and a wheel that was adjustable."

After all this positive swearing, the Dewey and other patents mentioned were shown to him and introduced in evidence as a part of his cross-examination. Of course, he could not deny that the Dewey patent had the adjustable wheel, or that it was adjusted by pointed screws, the very devices that Brill himself used. On page 34 he admits directly that the point centers in the Dewey patent are the same as in his own, but attempts to make a weak distinction because in the Dewey patent there was one more crank than there was in his patent.

Again, on page 37, he is compelled to admit that the operation of the pointed screws, which are shown in that patent and hang the crank shaft, is the same as the operation of the pointed screws in his own patent, but again asserts that there is a difference in construction. His counsel, on page 37, after seeing so many very old patents in which the screws are used as pointed centers, in combi-

nation with fly or driving wheels, admitted that they did not claim to be the inventors of the point centers or standards, etc. On page 41, Mr. Brill finally admits that what is described in the second claim of his patent is the same as what is shown in the prior patents, if the question of construction is left out. He thus retreats from what he before so recklessly swore to as to his being a radical originator of those adjustable fly-wheels, and falls back upon a mere attempt to point out differences in construction, because the fly-wheel in the lathe patents have several grooves by which the speed of the machine could be changed by running the belt in different grooves, while his wheel had but one groove. See pages 37 and 41. When asked and pressed to show what there was in his machine that was not in those older patents, the only reply that could be gotten out of him was to show that there were more things in those old machines than there was in his, but he seemed utterly unable to find anything in his machine that was not to be found in those older patents, certainly nothing that can be found in the defendant's machines. He makes a point on the projection D that is on one side of his wheel, which is different from the older patents, in which, instead of the projection D, they have a shaft that goes directly through the center of the wheel. But then the defendants also have the shaft going directly through the center of the wheel, and do not have the projection D. See pages 41 and 42.

276 On page 43, an ancient Florence sewing machine is shown to Mr. Brill, and he recognizes it as an old acquaintance. It has a needle bar that is carried and held in place and vibrated upon the ever-present pointed screws. In this instance, Mr. Brill shows that there is a very important difference between one pointed screw and the two pointed screws which the first claim of his patent calls for as two different and distinct elements of the combination covered by it. With two pointed screws, a fly-wheel or needle bar may be adjusted to an exact position, but with only one pointed screw only the lost motion can be taken up on the side on which the one pointed screw is placed. As the defendant never used any pointed screws, and only used at the most an equivalent for a pointed screw on one side of its wheels, and as the claim calls for both the pointed screws in terms, the difference between the use of an equivalent of one pointed screw without using any equivalent of the other, and using two pointed screws, is important.

With all this contradiction in his own testimony, and contradiction of the facts shown by the prior patents, which were indisputable records and absolute verities, Mr. Brill never wavered in his constant interpolation of opinions, which, in view of the actual facts, were but clumsy attempts at acting the part of an expert. When he was forced to admit that the same old pointed screws had been used in the Dewey patent, and that as there used they made adjustable bearings for the crank or driving wheel, and that with them the lost motion could be taken up, and that they reduced the friction and made the wheel run easy, it was the merest burlesque to still pretend that he was the first discoverer of the application of those screws in combination with driving or fly wheels for produc-

ing those effects. After showing that the same devices were used in those older patents, and that they there produced precisely the same effect as they produced in his patented combination, he still swore without any hesitation that there was nothing in those older patents that would even suggest his combinations, or his inventions. See his redirect testimony, from page 60 to 69.

The great effort of the plaintiff, finally, was to show that he had used the old combination, but without the crank shaft; that he had so shortened his bearing points that he in reality had left out the shaft part of the crank entirely. Even if this was so, it would not help his case if the rule of law is applied to it. All that the long shaft did was to place the screw points which made the adjustable bearings further apart. By taking out the shaft the screw points must be placed so as to connect with the ends of the crank. This merely leaves out the shaft, and at the same time leaves out the function which it performed. It did not make any difference
277 in the operation of the remaining elements. It is well settled that "it is not invention to omit one or more parts of an existing thing, unless that omission causes a new mode of operation of the parts retained."

Walker on Patents, sec. 35.

Stow *vs.* City of Chicago, 3 Banning & Arden's Patent Cases, 92.

McClain *vs.* Ortmayer, 33 Fed. Rep., 287.

Now, the testimony of Mr. Brill, as well as that of other witnesses, proves, without the color of contradiction, that all the benefits of the pretended invention existed in the former combinations of the pointed screw bearings used in combination with driving or fly wheels. In those combinations there was the same avoidance of friction, and the same "ease of operating the machine;" there was the same diminution of noise; there was the same means of "readily adjusting the bearings of the driving or fly wheel so that it may always run true and without shaking," as there was in the patented combinations; and there was the same taking up of lost motion. These things are proved without any contradiction, and the above authorities are therefore directly in point and applicable to the case.

Going through the testimony of the plaintiff, and some of his witnesses, it is seen that they admit and swear that the pointed screws and adjustable bearings were in the prior patents with supporting frames of some kind, and also that the fly or driving crank wheels were in these prior patents; also, that the pointed screws and adjustable bearings, with supports for them and the driving or fly crank wheel, are the things, and all the things, that there are in the plaintiff's patent; yet they say that the prior patents do not show what is in the plaintiff's patent, but are altogether different things, and that the plaintiff's pointed screws, with their adjustable bearings and supports, and fly or driving wheel, would not even be suggested to any one by seeing these same devices in those prior patents, where they were used to obtain the same results, and did

obtain the same results, and operated the same as did the same things in the plaintiff's patent; yet those same witnesses as solemnly swore that the defendant's machines contained the same combinations of devices, and were in effect the same thing as the Brill patent, although they did not have a pointed screw nor any adjustable bearings in them.

By adjustable bearings we mean those bearings that had screws at both sides, by means of which the shaft or wheel could be moved from one position to another and held in any desired position just as they can be placed by the two screws in the plaintiff's patent, and by the combination covered by its first claim, and as they could not be placed if only one pointed screw was used.

278 Of course, such testimony is the merest nonsense. It seems strange that either the court or the jury would consent to be governed by it. It seems so palpably absurd that most any court would feel more like punishing any party for contempt that would insult the common intelligence of ordinary men by bringsuch trash into a court of justice and dumping it there. To talk such stuff to ordinary business men, and ask them to make any investments upon the statements, would only occasion a silent smile of contempt.

We have been so far citing from the record for the double purpose of introducing to the court the merits of the case, and at the same time showing how the case was loaded down with this worthless sort of testimony, in which there was very little of fact, but most of which consisted of that sort of testimony that is termed expert. We say it was of that sort, but we do not mean to say that it belonged to that class of expert testimony that is usually admitted on the trial of patent cases. It was in the guise of expert testimony only, because it gave opinions instead of facts. As we have before stated, the real facts of the case were practically undisputed, but those real facts were buried almost out of sight under this matter of pretended opinions, which were not facts.

We have pointed out enough of the testimony of the case to show the bearings of many of our exceptions, and we will now proceed to present them.

There is one element that permeates many of the rulings and instructions of the court below of which we complain, and it occurs so many times and in so many forms that we will discuss the principle of it as a single proposition, and then make each of the several applications of it very briefly.

On page 229 of the record is shown an instruction given by the court to which exception 65 applies, and which is as follows:

"The principle of a machine means the peculiar mode, manner or device by which the proposed result or effect is produced. In other words, the combination of powers by which a definite result is produced is called the principle. And if the principle is the same and the effect is similar, in contemplation of law the machines are identical."

It will be noticed that in the foregoing instruction no allowance is made for the fact that the claims of the patent are for combina-

tion claims, and nothing else. It is very often the case that an invention is for an improvement to a machine which does not change its principle or mode of operation in the least. In this particular case, the plaintiff's own evidence shows that his invention did not change any mode of operation in the machine. On pages 34, 37 and 42, he distinctly shows that the same devices in the older
279 machines produced the same results. They made the machines run more easily, stopped the rattle, and provided for the same adjustments. On page 41, he testifies that what is found in the prior patents "would be the same thing, outside of the question of construction," as what the second claim of his patent covered.

The fact is that, before the trial was through with, the plaintiff had abandoned all attempts at showing anything new in his patent that could be found in the defendant's machine, except a shorter crank shaft. The adjustable bearings were the same in the old machines. The same point centers were used. Those point centers were carried upon the same kind of screws. The same driving or fly wheels were found in the older machines. The same operative kind of cranks were in the older machines. Even the bracket was found in the H. C. Smith patent of 1871, record, page 156, although in that patent the adjustable bearings are not found.

This bracket, however, is not in the defendant's machine. The defendant fastens its inside bearing to the brace. The braces were in all the old machines, about the same as the defendant used them. The braces were very old. Record 59, and 60. The braces could not be used if the bracket was used. Record, 143. It is evident that the bracket in the patent occupies the same space that was occupied by the old braces, and that both could not be used at the same time. Defendant has never used the brackets at all, but has used the old braces instead. The braces, however, are no part of Brill's invention. He changed from the braces to the bracket, which was a change for the worse, as the braces are the better of the two. Record, 143. Now he comes back and claims the braces as an equivalent of the brackets, but asks the court and jury, in effect, to decide that those same brackets are not equivalents of those same braces which were in use when Brill made his invention, and long before.

From all this it is impossible not to see that there is nothing new in the Brill device in its mode of operation, or in the production of new results, or in the combination of powers. Neither is there anything new in his combinations of devices, except that he may be said to substitute a bracket for holding one end of his crank, instead of using the older devices, which were in the older machines for holding that end of the crank; and also to substitute a crank with an arm fixed at one side of the center of the driving wheel, instead of using a regular crank shaft as the older machines did. The former machines had Brill's combinations in them, if an equivalent is the same thing as the particular device used. The same general combinations were in those old machines, and all that Mr. Brill did was to take out some

of the parts and substitute mechanical equivalents for them,
280 and make some slight changes in the construction, the change merely making the crank shaft shorter than it was before in the older patents put in evidence. In fact, he claims the main feature of his change to have been avoiding the use of a crank shaft altogether. In this matter his position is very inconsistent in the following respects. The defendant has a short crank shaft that goes right through the middle of the wheel, the same as former crank shafts did, instead of using a crank with an arm fastened to one side of the center of the wheel. When Mr. Brill is testifying to an infringement he swears that the arm attached to one side of the center of the driving wheel is the same thing as the crank shaft, except that they are a little differently constructed. Record, 17. When, however, he attempts to show any invention, he has to fall back on the difference in construction between his patent and the former combinations, which he says "would be the same thing, outside of the question of construction." Record, 41, 58 and 59.

We have been referring to the foregoing matters for the purpose of showing the court that the present is a case in which the defendant had a right to have the jury decide whether there was any new principle or mode of operation contained in Mr. Brill's device or not. The rulings and instructions of the court effectually decided the point against the defendant without giving the jury any voice in the matter.

On page 202 of the record are shown two instructions which the defendant asked to have given to the jury, and which the court refused to give, and to which refusal exceptions 37 and 38 were taken. Those instructions so asked for were as follows:

Under exception 37:

"A patentee is not entitled to appropriate the principle upon which a machine operates any farther than he has for the first time developed that principle. If the patentee has only made an improvement in an existing machine, and in so doing has not changed the mode or principle of operation of the machine, then he has not developed any part of the principle of the machine, and his patent must not be construed as covering anything more than the particular changes which he has made."

Under exception 38:

"Where the patentee has not made an improvement which changes the principle or mode of operation of a machine in any respect, he is not entitled to appropriate or make his patent cover any mechanical equivalents or substitutes of the devices which he has applied."

The contrast between the instructions given by the court, and the instructions above quoted, which we asked for and the court refused to give, is very marked. Which of them should have
281 been given? We say, those should have been given which the court refused to give. We also say that those which were given ought not to have been.

The question involved, which we are endeavoring to present, is as to the proper construction of patents for alleged improvements,

which consist of nothing except modifying the construction of existing machines without changing their mode of operation in any respect, but leaving them still doing only what they did before, and doing that in exactly the same way as they did it before. There was enough in this case, we claim, to entitle us to leave the fact for the jury to decide as to whether there was any new mode of operation developed by the patentee's changes or not.

It has been a seeming impossibility for defendants in the California circuit court to obtain the benefit of the law as laid down by the U. S. Supreme Court, and followed by the other circuit courts. A reference to the large number of reversals which have followed appeals from the decisions of the said circuit court taken by the defendants in patent cases during the last fifteen years proves the truth of the above assertion. Not a single one of the judgments against the defendants in a patent case, which the said circuit court has entered in the last fifteen years, has been affirmed by the Supreme Court. We have been for many years struggling to obtain the same law for the people on this coast that is enjoyed by the people of the other parts of the United States, and we are still making the struggle.

Now, we assert the law to be this: A patentee is entitled to be protected in just what he has invented and covered by his patent. If he has invented more than he has covered by his patent, then his rights are limited by his patent. If he has made his patent too broad, and covered with it more than he has invented, then his rights stop where his invention stops. Whenever the patent covers the invention the patentee is entitled to be protected in just exactly what he has invented. If he has invented a new machine, having a new mode of operation, then that new mode of operation is of his development, and he is entitled to invoke the doctrine of mechanical equivalents, and thereby cover all devices by which the discovery is appropriated by another. So long as what he has invented and patented is found in use by another, so long may the patentee's suit be maintained.

If, however, the patentee has only improved an existing machine by modifying its construction, and has not in such modification developed any new mode of operation whatever, he cannot invoke the doctrine of mechanical equivalents, for the reason that there can be no equivalent of a mere modification of machinery in which there is not a particle of new mode of operation. Such modification does nothing. It has no action. It is merely a change of inert matter. It performs no action whatever. It may be made to a moving part of machinery, but it does not change the movement of that part, and therefore the modification has no movement of its own. It begins and ends by making a change in construction, and in construction only. Any other modification will not be that modification. It cannot appropriate its principle of operation, because it had no operation; having no operation, it could have no principle of operation. Just so far as an invention has any new action of its own, just so far a patent for that invention will cover mechanical equivalents which

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appropriate that new action. But in so far as an invention appropriates the action of an existing active machine, just so far the invention does not create any action of its own, and just so far the patentee cannot cover mechanical equivalents, and thereby appropriate to himself the mechanical action which already belonged to another, or to the public, because that does not belong to him. He neither originated nor purchased it. He can no more appropriate to his own use mechanical action which he did not invent or originate than can an infringer appropriate to his use the mechanical action which the patentee did invent. The action of a machine to which an improvement is made that adds to, or modifies, the old action of such machine, is more or less changed by the improvement. Just so far as that old action is changed the new action belongs to the patentee of the improvement; but just so far as that old action is not changed it still belongs to the public, the same as it did before the patentee made his improvement. The improved action can only begin where the old action stops. To properly construe such a patent the exact dividing line between the old action and the new action must be found. So far as another uses the old action, by whatever devices he may use, which do not belong to the patentee, he will not be an infringer, because he will not be using any part of the invention. So far as another does use the new action he will be an infringer, because he will be using the whole, or some part of the invention. The whole object of construing patents is to find out just what the patentee has invented, so as to give it to him; and the whole of the law is properly administered when the patentee has been given the whole of his invention. The law has as certainly been outraged and the defendant unlawfully plundered when there is taken from the defendant and given to the patentee what he has not invented, as it is when the courts assist an infringer to take and keep that which belongs to the patentee.

According to the decisions of the Supreme Court rendered in deciding cases appealed, or carried up by writ of error, from the said California circuit court, the latter court has been in the habit of taking from defendants and giving to plaintiffs, by its judg-
283 ments and decrees, what never belonged to such plaintiffs, and what the defendants themselves were lawfully entitled to.

See, for instance:

Hoskin *vs.* Fisher, 125 U. S., 217.

St. Germain *vs.* Brunswick, 135 U. S., 227.

The authorities upon these propositions are numerous and strong, and of the highest known character. In McCormick *vs.* Talcott, 20 Howard, 402, the inquiry was whether McCormick was the first person who invented in a reaping machine the apparatus called a divider, performing the required functions, or whether he had merely improved an existing apparatus by a combination of mechanical devices which performed the same functions in a better manner. In its decision the Supreme Court, referring to the patentee, said on page 405:

"If he be the original inventor of the device or machine called the divider, he will have a right to treat as infringers all who make dividers operating on the same principle, and performing the same functions by analogous means or equivalent combinations, even though the infringing machine may be an improvement of the original and patentable as such. But if the invention claimed be itself but an improvement on a known machine by a mere change of form or combination of parts, the patentee cannot treat another as an infringer who has improved the original machine by use of a different form or combination, performing the same functions. The inventor of the first improvement cannot invoke the doctrine of equivalents to suppress all other improvements which are not mere colorable invasions of the first."

The foregoing case has been cited by the Supreme and other courts as a correct authority a great many times. It is a case of the very highest authority, and has been respected as such by the courts and text-writers.

Now, we ask the court to read this case until it gets the meaning of it. It first recognizes the distinction between the inventor of an original first machine, and a mere improver of that machine. Is there not a wide distinction between them? Does not the first inventor of the original machine discover, create and adapt to use the mode of operation of that machine? Does not such first inventor have the right to invoke the doctrine of mechanical equivalents, and thereby secure to himself the principle or mode of operation of that machine and of its several parts? Does not such first inventor of that first machine own all that there is in it? Is it not true that the first inventor's patent will expire in seventeen years, and is it not also true that when his patent expires that then all and everything that was contained in that first machine becomes the
284 property of the public? The court will without doubt answer in its own mind all of these questions in the affirmative.

But then follows another line of questions pertinent to the solution of the problem presented, and these questions are: Can there be more than one valid patent for that first invention? The authorities all agree that there cannot. Can there be any person except the inventor of that first machine who has any right to obtain a patent for anything that was in that first machine? Of course not, because no other person assisted in originating that machine. Can any person who makes an improvement to that machine appropriate to himself anything which was already owned and patented to the original inventor? Of course not. We think no court would hesitate for a moment to answer no to the question. Can any one, whether he be an improver of that original machine or not, appropriate to his own use anything which was covered by the patent of the original inventor of that first machine after his patent on that machine expires? Evidently he cannot, for all that was covered by that first patent has become public property by such expiration.

As the Supreme Court said in Smith *vs.* Nichols, 21 Wallace, on pages 118 and 119:

"A patentable invention is a mental result. It must be new and shown to be of practical utility. Everything within the domain of the conception belongs to him who conceived it. The machine, process, or product is but its material reflex and embodiment. A new idea may be ingrafted upon an old invention, be distinct from the conception which preceded it, and be an improvement. In such case it is patentable. The prior patentee cannot use it without the consent of the improver, and the latter cannot use the original invention without the consent of the former. But a mere carrying forward or new or more extended application of the original thought, a change only in form, proportions or degree, the substitutions of equivalents, doing substantially the same thing in the same way by substantially the same means with better results, is not such invention as will sustain a patent. These rules apply alike, whether what preceded was covered by a patent or rested only in public knowledge and use. In neither case can there be an invasion of such domain and an appropriation of anything found there. In one case everything belongs to the prior patentee, in the other, to the public at large."

We ask the court to particularly read the last two sentences of the foregoing quotation. What belongs to the original patentee cannot be appropriated by an improver. It does not belong to him. He invented none of it. The same is true as to those things which had become public property; that is, the things which rested
285 in public knowledge and use. None of those things were invented by the improver, and none of them belong to him. In attempting to appropriate them he is attempting to appropriate what does not belong to him. He is attempting to apply to his own individual use what he has found, not what he has invented or created. The application of this authority lies in the fact that the rulings and instructions of the lower court gave the principle of operation of the combinations called for by the claims of the plaintiff's patent to the plaintiff, notwithstanding that the evidence proved beyond a doubt that the principle or mode of operation of those combinations was older than Mr. Brill himself. As elsewhere pointed out in this brief, Mr. Brill himself swears to the same principle and mode of operation being very old, and being contained in prior patents in which the same or similar devices were used, and all of the same identical results in taking up lost motion, adjusting the driving wheel, reduction of friction, ease of operation and prevention of rattle were obtained. This being so, the lower court erred in holding that Mr. Brill was entitled to cover the mode of operation of the machine, and that his patent covered mechanical equivalents of the devices named in his patent as elements of the combinations which his claims covered. If there was any doubt as to the former patents showing combinations of substantially the same elements, producing the same results, and having the same principle and mode of operation, the question was one of fact, and it should have been left to the jury to decide.

Bischoff *vs.* Wethered, 9 Wallace, 812.

Tucker *vs.* Spalding, 13 Wallace, pages 455 and 456.

It is one of the elementary rules of patent law that a patent for an invention covers mechanical equivalents whenever the invention is appropriated by an infringer by means of such equivalents. But the person who stops when this rule of law is learned, without reading further and ascertaining the further rules that are applicable to the construction of patents, has a knowledge of patent law that is about commensurate with that of a criminal lawyer who stops with learning the elementary principle that it is the intent with which an act is committed that makes it a crime, or that the defendant in a criminal trial is entitled to the benefit of all reasonable doubts.

The rule stated as to patent law is limited to the appropriation of the invention by mechanical equivalents. When, however, the invention is of such a character that it cannot be appropriated by mechanical equivalents, as we claim that it was in the case at bar, then the rule has no application. We are endeavoring to show some at least of the instances in which the invention cannot be so appropriated, and that such instances always exist whenever the invention does not develop or produce any new principle of
286 mechanical operation, or any action that differs in its mode of operation for producing any given results from the prior actions of prior machines used for producing exactly the same results.

In our case there are shown several prior patents which had expired, and the inventions therein covered or described had become public property long before Mr. Brill's conception. Take, for instance, the patent to Dayton and Mallory (Record, page 37 to 39), which was granted in 1832. That patent was granted over sixty years ago, and seventeen years before Mr. Brill was born. In that patent are shown the treadle, the crank shaft (made shorter than the machine), two cranks, the combined driving and fly wheel, two pitmans connecting the treadle with the two cranks, and the two pointed screws forming exactly the same adjustable bearings as do the same kind of pointed screws in the plaintiff's patent. Now, everything in that patent had become public property when Mr. Brill was born. There is not a device in Brill's patent that is not in the Dayton and Mallory patent. It is true that he attaches his wrist pin to the wheel at one side of the center of the wheel, but this the defendant did not do, and Mr. Brill himself swears, as already pointed out, that such fact makes no difference in the machine. In the Dayton and Mallory patent there are the wrist pins to which the pitmans that connect with the treadle are connected. Brill has something less than is found in the Dayton and Mallory patent, but he has nothing more. What he has left out has not changed the operation of the parts in the least. In the Dayton and Mallory there are the pointed screws used for the adjustable bearings, and they operate exactly as they operate in Brill's. They take up lost motion; they adjust the cranks from right to left, or from left to right, as may be desired; and they reduce the friction and make the machine easy to run when it is in operation. Whatever may be found in the Dayton and Mallory that is not in the Brill, there certainly is nothing found in the Brill that is not in the Dayton and Mallory, and this assertion applies

both to the existence of the devices used and also to the operation of those devices, both in their individual operation and also in their operation when used in a combination of adjustable bearings, fly or driving wheel cranks, and supports for the pointed screws that support, adjust and carry the cranks and fly or driving wheel.

We call the attention of the court to the fact that in this Dayton and Mallory machine the crank shaft has been made shorter than the machine. It does not reach from one standard to the other, but it has a support of its own at its inner end, and is not fastened to the standard. The support which holds it at its inner end
287 reaches downward from the table or frame above, just as does the bracket in Brill's arrangement. True, it reaches farther and goes down to the frame below. But if the lower part is cut off just below the pointed screw, it would be Brill's bracket. The upper and Brill bracket part is there, and if there is an additional part that runs down to the frame below, it is so much that is additional to Brill's. In this respect, as in others, it shows that Brill added nothing to what was public property. He merely took what was public property and reduced the parts. In the Dayton and Mallory the shaft is shortened to the length desired, and at its inner end it has the pointed screw inserted in a cavity that is in the end of the crank arm, just exactly as the pointed screw is inserted in the cavity in the end of the crank arm in Brill's. Leaving off the lower end of the upright support that carries the inside pointed screw in the Dayton and Mallory patent, there will remain the Brill bracket, the Brill crank arm and wrist pin (not inserted in the wheel, however, but still the same wrist pin), and the Brill adjustable pointed screw, fitting in the end of the Brill crank arm, just as shown in the Brill patent. The crank shaft being shortened to nothing at the inner end of the Dayton and Mallory patent, it there shows the crank arm without any crank shaft between it and the pointed screw. There is a slight projection there in the line of the center of rotation which might perhaps be called so much of a crank shaft, but there is also the same thing in the Brill patent. If that projection does not make any part of a crank shaft in the Brill patent, it as certainly does not make any part of a crank shaft in the Dayton and Mallory patent. In any event, the Dayton and Mallory patent shows the crank shaft shortened. A part of it between the end standards is left off. For Brill to shorten that crank shaft still more, or even to leave it all off, is only a difference in degree of shortening or leaving off the crank shaft, and difference in degree where no new result is accomplished is not patentable invention.

See above quotation from Smith *vs.* Nichols. Also,

Preston *vs.* Manard, 116 U. S., 663.
Estey *vs.* Burdett, 109 U. S., 640.
Guidet *vs.* Brooklyn, 105 U. S., 552.
Glue Co. *vs.* Upton, 97 U. S., 6.

What we are endeavoring to demonstrate is that Mr. Brill's patent was not of that kind that allowed him to cover the principle of the operation of either of the combinations covered by either of his

claims, for the reason that neither one of those principles of operation or modes of operation was of his original creation; that those principles or modes of operation were already public property when
Mr. Brill first saw the light of day, and that in attempting to
288. appropriate them he is unlawfully attempting to invade the domain of the public, and to appropriate what was there found, instead of remaining upon his own premises and creating something new and original. In law it would make no difference whether he knew of those prior existing things or not. They were there and the property of the public, and if he was ignorant of that fact his ignorance gave him no right to appropriate the property that already existed and that did not belong to him. But he was not ignorant. On pages 59 and 60, and elsewhere in the Record, he shows that the brackets, braces, point centers, adjusting screws, cranks and crank shafts were all old and that he had been familiar with their uses.

Here we will deviate for the purpose of reminding the court that the principle or mode of operation of a machine is not patentable. No patent can be taken out for an effect produced, but only for the means by which the effect is produced.

Robinson on Patents, sec. 519, also sec. 518.

In Corning *vs.* Burden, 15 Howard, page 268, the Supreme Court repeats this elementary rule in the following language:

"But it is well settled that a man cannot have a patent for the function or abstract effect of a machine, but only for the machine which produces it."

Only the means by which a new principle or mode of operation is applied to practical use are patentable. If, however, the mode of operation is new with the inventor, as it always will be with an inventor who for the first time applies any means by which any new principle, or, what is the same thing, any new mode of operation, is developed—he will have the right to have his patent construed so as to cover all equivalent means by which that same mode of operation is developed to produce the same results. The doctrine of equivalents is only applied for the purpose of securing to an inventor the substance of his invention. The principle or mode of operation is only secured to an inventor by allowing him to spread his patent over equivalents; and extending an inventor's patent over equivalents is the only way known to the law for protecting an inventor in the principle or mode of operation of his invention. The extent, therefore, to which the doctrine of equivalents may be applied in any given case is exactly commensurate with the extent to which the inventor has for the first time developed, by the application of devices, some new principle or mode of operation. That new principle or mode of operation is protected by the law in no other way than by giving to the inventor both the particular devices which his patent describes and also allowing his patent to reach out and cover the mechanical equivalents of the
devices which are in terms covered by the patent. This, and
289 this only, is the use that is made of mechanical equivalents by the patent law; and this, and this only, is the method by

which the patent law protects the inventor in the new principle or mode of operatien which he has developed in the construction of his machine, or his improvements to a machine.

When, therefore, the court instructed the jury in effect that the plaintiff's patent covered mechanical equivalents of the devices named in the claims of the patent, it in effect instructed them that Brill was the original developer of the principle or mode of operation of the combinations which the claims of his patent covered. We say that either the court should have left this question to the jury to decide, or it should, in view of the facts proved or admitted to have existed at and prior to the time of Brill's alleged invention, have instructed the jury that the principle and mode of operation of those combinations were old and did not belong to Mr. Brill, and that, therefore, the claims of the patent only covered the particular means that were named in them. At the most, those claims could cover nothing except the difference between Brill's combinations and the similar combinations that had existed, and were public property at the time of Brill's alleged invention.

The number of cases in which equivalents were not allowed, because the evidence taken on the trial showed that the patentee was not the discoverer or originator of the principle or mode of operation of the machine which he improved, are too numerous to admit of any doubt as to such being the law. The fact is usually stated by the courts by saying that under the state of the art, as it existed when the invention was made, the patent must be limited to the particular devices, or the particular form described in and claimed in the patent, or by expressions of like character.

Proving the state of the art is only proving what was, or was not, known of the same subject before the patentee made his invention. In this case, both parties introduced proof of the state of the art in both forms. As we have already pointed out, Mr. Brill swore in his opening testimony that, at the date of his invention, there was no crank wheel in existence at all; that there was no sewing machine that had point centers like his; that there was no device in use for taking up lost motion of the wheel of a sewing machine, etc., etc., etc. (See Record, page 15.) If the state of the art had been such as Mr. Brill had thus sworn it was, his patent would have covered the first apparatus by which the lost motion of the wheel of a sewing machine could be taken up and he would have made a very radical invention—that is, supposing, in such case, he ever would have made the invention at all. There is no certainty that
290 he would ever have thought of any means for taking up the lost motion if he had not before that time learned of such means being used for that same purpose. In that case, the original principle would have been his, as he would have, for the first time, applied any means by which the lost motion of the wheel of a sewing machine could be taken up.

But when we introduced the Dewey patent and showed that the very same pointed screws had been used in that machine for taking up the lost motion of the wheel of a sewing machine, the evidence in regard to the state of the art was changed. The evidence then

proved that Mr. Brill was not the first one who had applied means for taking up the lost motion of the wheel of a sewing machine. Not only was he not the first one who had applied any means for taking up such lost motion and reducing friction and making the machine run easy, but he was not the first to apply those pointed screws, which were the only things that he did apply, for accomplishing those purposes. When this was shown, his claims to being the radical inventor vanished. Then it was certain that the use of those screws for accomplishing those purposes was not original with him, but on the contrary they were already public property, and Mr. Brill had no right whatever to them. Under the latter proof his invention was very much narrowed, and his patent under the law must be construed so as to protect the public by preventing Mr. Brill from taking anything more than he had invented.

The correct rule is stated in the syllabus in Hill *vs.* Sawyer, 31 Fed. Rep., 282, as follows:

"Where several patents exist for combinations, all producing the same results, but different in their forms of combination, the doctrine of equivalents has no application, and cannot be invoked by one patentee to suppress the combination of another."

The decision sustains this syllabus, and in the decision there are pertinent citations made to sustain it, including decisions of the Supreme Court.

The following are among the cases in which mechanical equivalents were not allowed to the patentee:

Railroad Co. *vs.* Mellon, 104 U. S., 112.
Crouch *vs.* Roemer, 103 U. S., 797.
Wicke *vs.* Ostrum, 103 U. S., 461.
Water Meter Co. *vs.* Desper, 101 U. S., 332.
Gage *vs.* Herring, 107 U. S., 640.
Fay *vs.* Cordesman, 109 U. S., 408.
Sargent *vs.* Hall S. & L. Co., 114 U. S., 63.
Burns *vs.* Meyer, 100 U. S., 671.
Keystone Bridge Co. *vs.* Phœnix Iron Co., 95 U. S., 274.
Roemer *vs.* Peddie, 132 U. S., 313.
291 Phœnix Castor Co. *vs.* Spiegel, 133 U. S., 360.
Consolidated Roller Mill Co. *vs.* Walker, 138 U. S., 133.
Hoff *vs.* Iron Clad Man. Co., 139 U. S., 326.
McClain *vs.* Ortmayer, 141 U. S., 419, and cases there cited.
Bragg *vs.* Fitch, 121 U. S., 478.
Dryfoos *vs.* Wiese, 124 U. S., 32.
Thompson *vs.* Boisselier, 114 U. S., 1.
Wollensak *vs.* Reiher, 115 U. S., 87.
Clark *vs.* Beecher Man. Co., 115 U. S., 79.
Crawford *vs.* Heysinger, 123 U. S., 589.
Weir *vs.* Morden, 125 U. S., 98.
Plummer *vs.* Sargent, 120 U. S., 442.
Snow *vs.* L. S. & M. S. Co., 121 U. S., 617.
Yale Lock Co. *vs.* James, 125 U. S., 447.
Hoffheins *vs.* Russell, 107 U. S., 132.
Rowell *vs.* Lindsay, 113 U. S., 97.

Brown *vs.* Davis, 116 U. S., 237.
Hartshorn *vs.* Saginaw Barrel Co., 119 U. S., 664.
Joyce *vs.* Chillicothe Foundry, 127 U. S., 557.
Peters *vs.* Active Manufacturing Co., 129 U. S., 530.
Delong *vs.* Bickford, 13 Fed. Rep., 32.
Scott *vs.* Evans, 11 *ibid.*, 726.
Root *vs.* Lamb, 7 *ibid.*, 222.
Osceola Man. Co. *vs.* Pie, 28 *ibid.*, 83.
Tobey Furn. Co. *vs.* Colby, 26 *ibid.*, 100.
Newark Mach. Co. *vs.* Hargett, 28 *ibid.*, 567.
Leach *vs.* Chandler, 24 *ibid.*, 791.
Phipps *vs.* Yost, 26 *ibid.*, 449.
Western & W. Co. *vs.* Rosenstock, 30 *ibid.*, 67.
Brahn *vs.* Ramapo Iron Works, 35 *ibid.*, 65.
Winne *vs.* Bedell, 40 *ibid.*, 463.
Falls Rivet Co. *vs.* Wolfe, 40 *ibid.*, 465.
Bishop *vs.* Romaine, 40 *ibid.*, 875.
Schmid *vs.* Scovill Man. Co., 37 *ibid.*, 345, see particularly page 348.
Wollensak *vs.* Sargent, 41 *ibid.*, 53.
Consolidated Patents Co. *vs.* Berry, 41 *ibid.*, 436.
Koch *vs.* Bolz, 42 *ibid.*, 454.
Sackett *vs.* Smith, 42 *ibid.*, 851, 852 and 853.
Heine *vs.* Safety Boiler Co. *vs.* A. Brewing Co., 43 F. R., 786.
Murbarger *vs.* Baker, 46 *ibid.*, 286.
Peoria Target Co. *vs.* Cleveland Target Co., 47 *ibid.*, 740.
Pettibone *vs.* Stanford, 48 *ibid.*, 302.

Where the invention is only of an improvement to an existing machine, as the great mass of patented inventions are, it is
292 necessary in construing the patent to keep constantly in mind the distinction between the invention and the original machine, or those portions of the machine which were not affected by the improvement. The court below, it will be noticed, in some instances instructed the jury as to the entire machine; as, for instance, the instruction under the 65th exception, page 229 of the Record. Also, under the 63d exception, on page 228. The first paragraph of the latter instruction, which is an instruction in itself, is as follows:

"It is a familiar rule, that a copy of the principle or mode of operation described in the patent is an infringement of it, and that it is only ingenious diversities of form and proportion, presenting the appearance of something unlike the thing patented which give rise to questions of non-infringement."

Although the foregoing is followed by additional matter, it is not in any way modified or qualified by such additional matter, and it is an instruction within itself. One great objection to it is, that it is not limited to what is described in the patent and claimed as new, but it includes all that is described in the patent whether it is claimed as new or not. In law nothing is patented except what is claimed. The foregoing instruction speaks of the "principle or

mode of operation described in the patent," not of the principle or mode of operation of what is covered by the claims of the patent. This was an important matter in view of the character of the case and the plaintiff's constantly varying positions taken during the trial of it. He first started out with the assertion that his was the first crank wheel ever made. Record, page 15. When on his cross-examination he had to admit that crank wheels were made before he was born, he fell back upon his combinations. Record, page 60. In the meantime he had been compelled to practically admit that his combinations were not new, and then he fell back upon the slight differences in construction of the parts. Record, pages 40 and 41.

His construction, however, was not in the defendant's machine, and then he had to fall back upon the general principle of operation of the entire machines, and then in law it would have been necessary for him to show that there was some new principle of operation in his machine that was due to his improvements, and that the same general principle and mode of operation was not in the former machines, and had not already become public property, so that neither Mr. Brill nor any one else could take it from the public and appropriate it to his individual, exclusive use. The court, however, rescued the plaintiff from the necessity of making this proof by its rulings and instructions. The case went to the jury with instructions to the effect that there was an infringement if the defendant's machine operated upon the same general principle and mode
293 of operation as did the plaintiff's, without the jury being allowed to find or decide whether that principle and mode of operation was any part of Mr. Brill's originating or not. Considering the almost undisputed showing which proved beyond a doubt that the entire principle and mode of operation of the plaintiff's combinations were public property before Mr. Brill was born, we think we have good cause to complain bitterly of the rulings and instructions referred to.

It is commonly the case in applying for a patent for an improvement on a machine that it is necessary to describe the old machine in order to show the improvement. As the Supreme Court say in Merrill *vs.* Yeomans, 94 U. S., on page 570:

"When a man supposes he has made an invention or discovery useful in the arts, and, therefore, the proper subject of a patent, it is, nine times out of ten, an improvement on some existing article, process or machine, and is only useful in connection with it. It is necessary, therefore, for him, in his application to the Patent Office, to describe that upon which he engrafts his invention, as well as the invention itself; and, in cases where the invention is a new combination of old devices, he is bound to describe with particularity all these old devices, and then the new mode of combining them, for which he desires a patent. It thus occurs that, in every application for a patent, the descriptive part is necessarily largely occupied with what is not new, in order to an understanding of what is new.

"The act of Congress, therefore, very wisely requires of the applicant a distinct and specific statement of what he claims to be new,

and to be his invention. In practice, this allegation of the distinct matters for which he claims a patent, comes at the close of the schedule or specification, and is often accompanied by a disclaimer of any title to certain matters before described, in order to prevent conflicts with pre-existing patents.

"This distinct and formal claim is, therefore, of primary importance, in the effort to ascertain precisely what it is that is patented to the appellant in this case."

The above being the law, an instruction to the effect that there was infringement if the defendant's machine, as a whole, operated upon the same principle as did the Brill machine, as a whole, was clearly erroneous. It practically left out of consideration the question as to whether Brill had made any improvement at all, and it also left out of consideration the question as to whether the defendant use the patented combinations or not.

The extreme desperation into which Mr. Brill was driven during his examination and the introduction of the old expired patents, in which he was obliged to so constantly change his assumptions and positions, is well shown by his bold conclusions on pages 68
294 and 69, in which he testifies that although both the prior patents and his machine had the pointed screws and bearings for those pointed screws, and although in both, the pointed screws were on both sides of the fly-wheel, and although in both, the pointed screws were adjustable, and in both, the pointed screws supported the devices which carried the fly-wheel, yet they were not at all alike and they worked on different principles and different mechanism and performed different results. We have already referred to Mr. Brill's own testimony, where he swore that these different devices in the old machines produced the same results; those results being the taking up of lost motion, adjusting the wheel, stopping the rattle, and making easy running. Record, pages 41 and 42.

With such inconsistent testimony given on the part of the plaintiff, it was important that correct instructions should have been given, and when the court ruled and instructed the jury in effect that the principle and mode of operation of the machine belonged to the plaintiff, without leaving it for the jury to decide whether such was the fact or not we claim that grievous error was committed. For these reasons we think that the instructions shown under exceptions 57 to 67, inclusive, on pages 226 to 230 of the record, ought not to have been given, and that the instructions asked for by the defendant and shown under exceptions 21 to 56, inclusive, on pages 194 to 210 of the Record, ought not to have been refused. While we do not stop to criticise each one of the instructions given and excepted to, nor each one of those asked for and refused, and to the refusal of which we excepted, we still claim our strict rights in regard to each and every separate and individual one of them.

We also think that the court below erred in another respect, in which the errors, if such they were, ran almost throughout the trial of the case, and particularly in giving or in refusing to give instruc-

tions; and that is, in respect to the construction to be given to combination claims.

In this respect, as we understand the position of the court, there may be an infringement of a combination claim, even though all the elements of the combination, either in the shape of equivalents or otherwise, are not used by the defendant, providing that what the defendant does use operates upon the same principle and mode of operation, as the combination claimed would work. This question differs from those we have been discussing, in that it draws into it the legal construction that is to be given to combination claims, and presents the limitations beyond which combination claims can never go under any circumstances whatever.

The rules in regard to combination claims we assert to be these, viz:

295 A combination claim admits, *per se*, that all of the separate elements of the combination are old, and that separately they are no part of the patentee's invention that is covered by the claim.

A combination claim is for the combination alone and covers nothing but that combination.

A combination is not the same as another combination, even though it has all the elements of the latter combination less one, providing that the element left out is not replaced by some other element that performs the same function, and operates in the same way, as the omitted element.

We also add that the law of equivalents applies to combination claims just exactly the same as it does to all other claims. In such application the law is, that if the combination which is claimed is itself but the duplication of older combinations of the same kind, and in which there is no new principle of action, nor any new mode of operation, then the claim will not be construed to cover any equivalents of the devices used in the last combination, for the reason that all that the patentee did was to take an existing combination and remove some of the devices, and replace them with other equivalent devices which did the same things as the old ones did, and did that in the same way. As for instance, suppose that an original inventor, A, takes out a patent for his combination which was the first of the kind, and consisted of devices 1, 2 and 3. The first infringer, B, takes that combination and removes the device 1, and replaces it with another device 4, which does the same thing and does it in the same way. This infringer, however, takes out his patent for his new combination. Another infringer, C, takes the original combination and removes the part 2, and supplies in its place another equivalent device 5, which does the same work and does it in the same way. The first infringer, B, brings suit upon his combination against the second infringer, C. The first and real inventor, A, also brings suit against the same second infringer, C, upon A's combination claim. Both suits are tried together and by the same court and are both submitted for decision at the same time. The judge will, of course, hold that the second infringer infringed the combination claim of the first patent. But

can he at the same time hold that the second infringer also infringed the combination claim of the first infringer, B. The second infringer's combination would be the same in principle and in mode of operation as the first infringer's combination. The evidence would also show that while the second infringer had left out one of the elements of the first infringer's combination, he had replaced it by a mechanical equivalent. But the evidence would also show that the first infringer's invention was in fact limited to the removal of element 1, of an older combination, and replacing
296 it with another mechanical equivalent, element 4. This being the full extent of his invention, his patent should be limited to his invention. Now, the second infringer did not leave out of the first combination the same element 1, that the first infringer left out, neither did he replace that element with any mechanical equivalent. He, therefore, did not adopt any part of the change in the existing machine which the first infringer had made. He, therefore, did not use any part of the first infringer's invention, and he could not be held to be an infringer of the first infringer's patent without giving to that patent a construction which would give to its owner something to which he was not entitled, and to do that, somebody else must be robbed of whatever is so given to the first infringer.

Now, remembering that it makes no difference in law whether the first combination belonged to a patentee or to the public, the court will readily see that so long as all that Brill did was to take the combinations that were public property and make changes in them, that he could only cover by his claims the particular changes which he made, and so long as the defendant did not use any of those changes that Brill made—whether those changes be considered with regard to devices, or to principle or mode of operation—it seems plain that anything given to the plaintiff is so much unjustly taken from the defendant. So long as all that the defendant uses that can be found in the Brill patent is also found in the earlier combinations, it seems equally clear that the defendant has not appropriated anything that Mr. Brill originated. So long as there is no principle or mode of operation in the defendant's machine that can be found in the Brill patent, except the same principle and mode of operation that existed in the old machines, and so long as none of the changes which Brill made from the old machines can be found in the defendant's machines, it certainly seems to us unreasonable to instruct the jury that if the same old principle that existed in the old machines can be found in the defendant's machines, that then the defendant's machines are infringements of the Brill patent.

In suits on combination claims, the question often arises as to whether the devices used by the defendant are equivalents of those contained in the combination claim, or whether they are different devices. In such case, the same test is applied as in other cases for determining whether the defendant uses equivalent devices or not. That test is: Do the two devices operate upon the same principle? Do they have the same mode of operation? This test is only ap-

plied, however, to infringements of combination claims, when the defendants have in their machine a combination which may correspond to the combination claimed. The defendant's combination must have a corresponding number of devices.

Each and every specific device that is claimed as one of the
297 elements in the patented combination must have a specific device that represents it in the defendant's combination. If this is not so, then there can be no infringement. The question as to whether the same principle or mode of operation is in the defendant's machine, is limited to the inquiry as to whether the same principle or mode of operation that is found in the patented combination is also found in a similar combination in the defendant's machine. In suits based on combination claims, the inquiry is not extended to the entire machines in which the respective combinations are found, but it is limited to the combinations themselves.

We understand the substance of the instructions of the lower court in the case at bar to be that, if the defendant's machine operates upon the same mechanical principle as that of the patented machine, then the defendant's machine will infringe the patent, notwithstanding that the claim of the patent is a combination claim, and notwithstanding that all the elements of the combination, or the equivalents of any omitted element, cannot be found in the defendant's machine. That if the defendant's machine has the patented combination in it, it is an infringement for that reason. That if it does not have every element of the combination in it, it will still be an infringement if it operates upon the same general principle and produces the same effect. Now, this last proposition is not law and never has been the law. While the question, as to whether the defendant's devices are in fact the equivalents of the devices of the patented combination, is often solved by comparing the effects produced by the several devices of the two machines with each other and ascertaining whether they severally and collectively operate upon the same general principle or not, it still has never been the rule of law that if the patented combination contains a given number of elements, and the defendant's combination leaves out one of those elements and does not supply its place with an equivalent of the element thus left out, that there can be any infringement, even though the defendant's machine performs exactly the same operations, and produces exactly the same effects as the patented machine. This has many times happened in cases where the patent was taken out with a claim for a combination only, and the patentee had happened to use more devices than were necessary to produce the necessary effect, and had included in the claim of the patent some useless element. The defendant in such case could make the exact machine of the patent by leaving out the useless element, and there would be no infringement. Such a case was Williams *vs.* Stolzenbach, 23 Fed. Rep., 39. The syllabus of that case states the rule in this language:

"It is beyond the province of judicial construction to eliminate
from a claim an explicitly declared constituent of a combi-
298 nation, merely because it is in fact unnecessary in effecting the desired result."

without infringement use another machine which includes every element of that combination less one, notwithstanding that such machine of the defendants may be, in its structure and operation, substantially the same as the machine that contains the patented invention, in its structure and operation, and may produce exactly the same effect, and do exactly the same kind of work, and by exactly the same kind of operation.

There is another rule of patent law which we again invoke, and which forbids the idea that an infringement can be worked out by finding that if one machine operates the same as another and produces the same effect that it is an infringement of the patent for combinations in the first machine, although that patent does not contain every element of any one of the combinations and does not contain any equivalent of some one of the omitted elements. The rule is that every patentee is bound by the claims he makes in his patent, and cannot cover anything that he has not specifically claimed, equivalent devices being always considered the same as the particular devices included within the claim.

In Keystone Bridge Co. *vs.* Phœnix Iron Co., 95 U. S., 274, the Supreme Court says:

"When the terms of a claim are clear and distinct (as they always should be), the patentee, in a suit brought upon the patent, is bound by it. Merrill *vs.* Yeomans, 94 U. S., 568. He can claim nothing beyond it. But the defendant may at all times, under proper pleadings, resort to prior use and the general history of the art to assail the validity of a patent or to restrain its construction. The door is then opened to the plaintiff to resort to the same kind of evidence in rebuttal. But he can never go beyond his claim. As patents are procured *ex parte*, the public is not bound by them, but the patentees are, and the latter cannot show that their invention is broader than the terms of their claim; or, if broader, they must be held to have surrendered the surplus to the public."

301 This case also remarks that since the patent act of 1836, the law has required the applicant for a patent to particularly specify and point out the part, improvement, or combination which he claims as his own invention or discovery. Prior to the law of 1836, patents were not required to be construed according to strict claims as they have been since.

The case of Merrill *vs.* Yeomans, above cited by the Supreme Court, is a very interesting one and holds that the patentee is bound by his claims, as do also the cases of—

Shephard *vs.* Carrigan, 116 U. S., 593.
Leggett *vs.* Avery, 101 U. S., 256.
Goodyear Dental Vulcanite Co. *vs.* Davis, 102 U. S., 222.
Fay *vs.* Cordesman, 109 U. S., 403.
Mahn *vs.* Harwood, 112 U. S., 354.
Cartridge Co. *vs.* Cartridge Co., 112 U. S., 624.
Sargeant *vs.* Hall Safe and Lock Co., 114 U. S., 63; and others.

Now, if a patentee is bound by his claim, and we think the court will, under the law and authorities, agree with us that he is, what becomes of the idea that the claims may be overlooked, and the fact inquired into, as to whether the defendant's machine has substantially the same construction and operation as the patented machine. Most patents are taken out for improvements only, and all the prior machines that did the same kind of work produced the same effect, operated on the same mechanical principle, operated in the same way, and yet did not contain the special invention that was covered by the last patent. Being prior machines they could not be infringements, in spite of their similarity of construction, effect, and operation. Indeed many, and probably fully one-half, of all the patents taken out are for changes in existing machines, and are changes only for worse, and are never used. The owners of such patents will, however, sue other machines, and assert that they operate upon the same principle and do the same work and operate in the same way that their patented machine would if it was made and used. He asserts that his patent covers a principle and that it is used by the defendants. Yet, in truth, he only made a change for the worse in existing machines, which he had already found doing the same work, made according to the same general construction and operating in the same way. His claims will be for his improvement and will not be infringed, yet he will assert that the doctrine of equivalents works out an infringement for him.

We hope and trust that we may have by this time convinced the court that the patentee is bound by the claims of his patent. That the question of infringement does not turn upon the simi-
302 larity of the plaintiff's machines, and defendant's machines, but upon the similarity of the defendant's machines to the claims of the patent. That the plaintiff, in order to recover, must have a patent, and that patent must have one or more claims, and the defendant must either make, or use, or sell something which one or more of the claims of the patent covers. That in the case of a machine, whenever the claims of the patent fail to cover what the defendant has made, no infringement can be worked out by falling back upon the position, that if the defendant's machine is constructed substantially like the patented machine and operates upon the same mechanical principle that it is an infringement notwithstanding that the claims of the patent will not cover it. It is not one case in five that the patentee has invented anything that covers any new mode of mechanical operation or any new principle of operation. In at least four cases out of five the machine patent granted is for some change in an existing machine that has already been made and is in successful operation. These changes are called (often miscalled) improvements, and are patented as improvements. Yet they do not change the mode of operation of the old machine in the least. That machine was already in successful working order (it is seldom that any improvement is attempted upon any machines that are not already established as successfully working machines), and had its mode of operation, and its mechanical construction and mode of construction in the public knowledge; and in the

majority of cases all these features already were public property, the original patents to the original inventors having expired. These patents for improvements are taken with claims that do not cover mechanism that made any change in the mode of construction or mode of operation of the existing machine. The change which the inventor of the improvement has made involves nothing of the kind, and consequently the Patent Office will not allow him any patent with claims that cover anything of the kind. The Patent Office grants the patent for just what the inventor has invented, and as that does not involve any new mode of operation, or any new mode of construction, or of mechanical operation, the claims of the patent will not cover anything that involves any new mode of construction or new mode of operation. Now, the court can readily see that if, on the trial of the case for infringing the patent in such a case, when it was found that the claims of the patent did not cover the defendant's machine the plaintiff could fall back upon the proposition that even if the claims of the patent did not technically cover the defendant's machine, still the two machines were constructed substantially alike and contained the same identical mode of operation, and the defendant's therefore
303 was an infringement, and if the court would agree with the proposition, then there would be taken from the public (or from the original inventor of the original machine if his patent had not yet expired) and given to every so-called improver the original mechanical construction and mode of operation of the original machine, no part of which was the invention or discovery of such improver, and no part of which is or could be legally covered by his patent. In too many cases the patent for the so-called improvement is for a change or addition that injures instead of bettering the machine alleged to be improved, and the patent for such alleged improvement is actually taken out as one step in an effort to appropriate the original machine, by taking out a patent for a change that works only an injury to the machine, and then crying out the "same principle and mode of operation" against those who continue to make, either the original machine without any change, or with other changes that are of sufficient benefit to be introduced into practical use, and which do not include any part of the patentee's changes.

In the case of the corn-planter patent, Brown *vs.* Guild, 23 Wallace, 181, the Supreme Court, on pages 224 and 225, says:

"The language of the act of 1836, under which these patents were drawn, is that before any inventor shall receive a patent for his invention or discovery he shall deliver a description thereof, and of the manner and process of making, constructing, using and compounding the same, in such full, clear and exact terms as to enable a person skilled in the art to reproduce it; and the act requires that the inventor shall 'particularly specify and point out the part, improvement or combination, which he claims as his own invention or discovery.' This, of course, involves an elimination of what he claims as new from what he admits to be old. But what can be a more explicit declaration of what is new and what is old

than the summary of the patentee's claim at the close of the specification, if that is made in clear and distinct terms, or in terms so clear and distinct as to be fairly understood. It implies that all the rest is old, or, if not old, that the applicant does not claim it so far as that patent is concerned. If the patentee by his specification, including the summary claim at its close, points out and distinguishes what he claims as his own invention, it is all that is required. That, if we can find it without difficulty or embarrassment, is what he claims as new; the rest he impliedly, if he does not expressly, disclaims as old. No particular form of words is necessary if the meaning is clear.

"These observations apply equally to patents for combinations and patents for improvements. Where a patentee, after describing a machine, claims as his invention, a certain combination of elements, or a certain device, or part of the machine, this is an implied declaration as conclusive, so far as that patent is con-
304 cerned, as if it were expressed, that the specific combination or thing claimed is the only part which the patentee regards as new. True, he or some other person may have a distinct patent for the portions not covered by this; but that will speak for itself. So far as the patent in question is concerned, the remaining parts are old or common and public."

Now, we ask: Is not the foregoing authority eminent enough to be respected, on account of its high source? Is it not so explicitly in accordance with the very terms of the law which it expounds as to command respect on account of its evident correctness? Would this court be now willing to take that same law and give to it any other construction than the Supreme Court has given to it in the above quotation? Are not the terms of the law explicit, in requiring that the patentee shall describe his invention, and by his claim inform the public what his invention is? Nay, more, is not the law itself just and proper in extending to the public, for their information, so that they may know what is patented and what they may use without infringing, a requirement that the patentee, who frames his own claims, shall distinctly point out in his patent; and by his claims, what his patent covers? Would this court now change, if it could, either the law itself, or the construction of it which the Supreme Court has given to it in the foregoing quotation? If not, then we appeal to the court not to throw away from us in this case the protection of the law, and say that even though the defendant's machine does not contain any one of the combinations covered by either claim of the patent, yet it infringes because it contains the same construction, or principle, or mode of operation.

In the case of Rowell *vs.* Lindsay, 113 U. S., on pages 101 and 102, the Supreme Court again repeats the language from the Corn Planter case, which we have above quoted, reaffirming the last-mentioned decision.

We will now cite authorities to sustain the rule before stated that in claims for combinations, not only are the elements of which such combination is composed admitted to be no part of the invention which that combination covers, but whenever any one element of

the combination is left out, that the invention covered by the claim is not taken, and there is no infringement.

In the last-mentioned case, Rowell *vs.* Lindsay, 113 U. S., on pages 101 and 102, the Supreme Court says:

"The patent of the plaintiffs is for a combination only. None of the separate elements, of which the combination is composed, are claimed as the invention of the patentee, therefore none of them standing alone are included in the monopoly of the patent. As was said by Mr. Justice Bradley, in the case of the Corn Planter patent, 23 Wall., 181, 224:"

305 (Here the court quotes the same matter that we have quoted above and adds to it:)

"See also Merrill *vs.* Yeomans, 94 U. S., 568, 573; Water Meter Co. *vs.* Desper, 101 U. S., 332, 337; Miller *vs.* Brass Co., 104 U. S., 350. These authorities dispose of the contention of the plaintiff's counsel that their patent covers one of the separate elements which enters into the combination, namely, a slotted wooden beam, because as they contend that element is new, and is the original invention of the patentees.

"The patent being for a combination, there can be no infringement unless the combination is infringed. In Prouty *vs.* Ruggles, 16 Pet., 336, 341, it was said: 'This combination composed of all the parts mentioned in the specification, and arranged with reference to each other, and to other parts of the plough in the manner therein described, is stated to be the improvement and is the thing patented. The use of any two of these parts only, or of two combined with a third which is substantially different in form or in the manner of its arrangement and connection with the others, is, therefore, not the thing patented. It is not the same combination if it substantially differs from it in any of its parts. The jogging of the standard into the beam, and its extension backward from the bolt, are both treated by the plaintiffs as essential parts of their combination for the purpose of brace and draft. Consequently, the use of either alone by the defendants, would not be the same improvement nor infringe the patent of the plaintiffs.'

"To the same effect see also Stimpson *vs.* Baltimore and Susquehanna Railroad Co., 10 How., 329; Eames *vs.* Godfrey, 1 Wall., 78; Seymour *vs.* Osborne, 11 Wall., 516; Dunbar *vs.* Myers, 94 U. S., 187; Fuller *vs.* Yentzer, 94 U. S., 288.

"But this rule is subject to the qualification that a combination may be infringed when some of the elements are employed and for the others mechanical equivalents are used which were known to be such at the time when the patent was granted. Seymour *vs.* Osborne, *ubi supra:* Gould *vs.* Rees, 15 Wall., 187; Imhauser *vs.* Buerk, 101 U. S., 647."

The court then goes on to discuss the question as to whether the top of a curved shank was the equivalent of the brace bar which the defendants had left out of their combination. The court in deciding that it was not, says:

"On the contrary the defendants, by reason of the absence of the brace bar, are forced to make their shank of larger diameter than

that used by the plaintiffs in order to give it the requisite strength to prevent bending. Instead of stiffening the shank between the tooth and the beam, it rather brings an increased strain upon that part of the shank. We find, therefore, that the curved upper
306 part of the shank used by defendants does not perform one of the material functions of the brace bar of the plaintiff's combination. It cannot therefore be the equivalent of the latter. For where one patented combination is asserted to be an infringement of another, a device in one to be the equivalent of a device in the other must perform the same functions."

Now, may we not with propriety ask the court to accept the foregoing definition of what constitutes a mechanical equivalent as correct? It is a definition given by the Supreme Court of the United States. It agrees with all the accepted definitions of what constitutes a mechanical equivalent that have been given from that day to the present, and we believe also that it agrees with all the accepted definitions that have ever been given. A device to be a mechanical equivalent, or substitute, of another mechanical device must perform the same functions; or, as it is more frequently phrased, it must produce the same effect.

In all cases and by all courts whose decisions have been accepted as authority the rule has been adhered to that equivalents to be an infringement must perform the same functions, produce the same results and effects, as the devices performed and produced for which they were substituted. Unless they do this they are not mechanical equivalents, either in law, or in a literal sense.

In Judge Sawyer's charge in Carter *vs.* Baker, 1 Sawyer, 516, he says: "When in mechanics one device does a particular thing or accomplishes a particular result, every other device known and used in mechanics, which skillful and experienced workmen know will produce the same result, or do the same particular thing, is a known mechanical substitute," etc. And further, "It is sufficient to constitute known mechanical substitutes, that when a skillful mechanic sees one device doing a particular thing, he knows the other devices, whose use he is acquainted with, will do the same thing."

In Seymour *vs.* Osborne, 11 Wall., 556, the Supreme Court says: "Patentees, therefore, are entitled in all cases to invoke to some extent the doctrine of equivalents, but they are never entitled to do so in any case to suppress all other substantial improvements, and the rule which disallows such pretensions, if properly understood and limited, is as applicable to the inventor of a device, or even of an entire machine, as to the inventor of a mere combination, except that the inventor of the latter cannot treat any one as an infringer whose machine does not contain all of the material ingredients of the prior combination, as in that state of the case the subsequent invention is regarded as substantially different from the former one, unless the latter machine employs as a substitute for the ingredient left out to perform the same function some other ingredient which was well known as a proper substitute for the same when the

307 former invention was patented. Prouty *vs.* Ruggles, 16 Pet., 341; Johnson *vs.* Root, 2 Cliff., 123."

"*Bona fide* inventors of a combination are as much entitled to suppress every other combination of the same ingredients to produce the same result, not substantially different from what they have invented and caused to be patented, as any other class of inventors."

Here again we have the same thing repeated in substance, that to be an equivalent device it must produce the same results and "perform the same functions."

In Imhauser *vs.* Buerke, 101 U. S., 656, the Supreme Court says:

"Patentees of an invention consisting merely of a combination of old ingredients are entitled to equivalents; by which is meant that the patent, in respect to each of the respective ingredients comprising the invention, covers every other ingredient which in the same arrangement of the parts will perform the same function if it was well known as a proper substitute for the one described in the specification at the date of the patent. Hence, it follows that a party who merely substitutes another old ingredient for one of the ingredients of the patented combination is an infringer, if the substitute performs the same function as the ingredient for which it was so substituted," etc.

In Machine Co. *vs.* Murphy, 97 U. S., 125, the Supreme Court says:

"In determining the question of infringement, the court or jury, as the case may be, are not to judge about similarities or differences by the names of things, but are to look at the machines, or their several devices or elements, in the light of what they do, or what office or function they perform, and how they perform it, and to find that one thing is substantially the same as another if it performs substantially the same function in substantially the same way to obtain the same result; always bearing in mind that devices in a patented machine are different in the sense of the patent law when they perform different functions or in a different way, or produce substantially a different result."

We think under the law, as we hope we have succeeded in showing it to be, that the court should have given the instructions that were asked for by the defendant, and shown under exceptions numbers 22, 32, 33, 35, 36, 37, 38, 40, 41, 42 and 44.

We also think that there was error in giving the instructions that were given, which are shown under exceptions numbered 57, 59, 61, 62, 63, 64 and 65.

We also claim that there was error in overruling the defendant's objections to the questions asked and shown under the first, second, fifth, sixth, eighth and tenth exceptions, which are shown on pages 64, 76, 85, 100 and 116, respectively.

We also claim that there was error in ruling out the defendant's questions which were objected to by the plaintiff, and which
308 are shown under exceptions 15, 16 and 17, on pages 147, 148 and 150 of the Record, respectively.

Another point, but one that has to some extent been included in the foregoing discussion—at least, far enough to be covered by the authorities already cited—is as to the infringement. We have

shown by the authorities that there can be no infringement of a combination claim unless all the elements of that claim are found in the defendant's machine. We present this point just as though this was a case in which mechanical equivalents were allowed. Even in such case we say there was no infringement; certainly not of the first claim. The first claim is as follows:

"The combination of the wheel C, arm E, bracket B, standard H and screws F, G, substantially as and for the purpose shown and specified."

Now, this claim calls for the screw F, and it also calls for the screw G, in terms. Both of these screws are adjusting screws. Both devices are screws. Whether they must be pointed or not, they must be screws. The language of the specifications is "screws," and the language of the claim is "screws." Record, page 12.

Now, the defendant's first machine had no screws at all in it. It had a short crank axle with conical bearings on each end. There were two sockets for these conical bearings to run in. One of these bearings was stationary and could not be moved in any direction. The other conical bearing was in the end of a movable slide that was fastened to the brace that formed a part of the frame of the machine. The whole arrangement is shown in the defendant's patent granted to Miller and Diehl. See Record, pages 172 to 175. The drawings in this patent, next to page 173 of the Record, show the arrangement perfectly of the defendant's first machine. The lug, or slide, which carried the inside socket bearing, was fastened to the brace by a screw-bolt W. This screw-bolt passed through a slotted hole in the lug, or slide, and this slotted hole allowed the slide to be moved by hand back and forth when the screw-bolt was loosened. When there was any lost motion to take up, the screw-bolt was loosened and the slide was moved up by hand and the screw-bolt tightened again.

This screw-bolt did not take the place of either one of the screws of the patent. There were no means in the defendant's machine by which the wheel could be moved from right to left or from left to right. By means of the two screws of the patent, the wheel could be moved from right to left or from left to right, and thereby be adjusted to any position desired.

The screw was a device which carried the point center. It not only carried it but it moved it. The plaintiff's point centers could not be moved except by turning the screws. They could not be moved by the hand alone. The hand could move the point
309 centers by turning the screws, but it could not move them without the use of the screws. In the defendant's machine, the hand moved the point centres without the use of the screws or of any intervening device whatever. There was, therefore, no equivalent, in the defendant's machines, of the screw for carrying and moving the point centers back and forth, of any nature or kind. There was no device in the defendant's machine that could be used, in any form, for performing this duty. It had to be done by hand, and it could be done in no other way.

Brown *vs.* Davis, 116 U. S., 237.

This is explained in the Record. On pages 159 and 160, Mr. Bell explains that there is no equivalent for the screw, as a screw, in the defendant's machine. It is self-evident that there is not any screw or any equivalent of any screw in the defendant's first machine. Even in the second machine there is only one screw, and no second screw or any equivalent of it.

All the machines sold by defendants from 1876 up to 1886, when the second machine, Exhibit 5, was adopted, were like the first machine. Record, page 22. Most of the machines, which are claimed to have been infringements, were, therefore, like the first machine, Exhibit 3.

That two screws will adjust, while one screw will not, is shown in the evidence of Mr. Brill himself. The needle bar of the Florence machine had the adjustable screws. Brill testifies that one screw there would not work at all, and that there is a big difference in that combination between one screw and two screws. Record, page 43. The fact is self-evident, and there is plenty of other evidence that shows the same thing. Record, 27; 117, 118, 119; 153, 154; 162, 163; 178 and 179.

Since the claim calls for both screws by the very letters by which they are indicated in the patent, and since there is, at the most, only one screw in either of the defendant's machines, and since the duty performed by the second adjustable screw is not performed by any device in defendant's machines, it seems strange that any court should seriously hold that the first claim, which is a combination claim and nothing else, and specifies each one of the two screws as one of the elements of the combination, is infringed by either of the defendant's machines.

Now that the court must have become familiar with the merits of the case, we will present the thirteenth exception, which is found on page 128 of the Record.

When all the testimony of the plaintiff was in, the defendant requested the court to direct the jury to find a verdict for the defendant upon the ground that the testimony conclusively showed
310 an absolute lack of patentability and novelty of the alleged invention, and an absolute anticipation of the alleged invention, and also conclusively showed non-infringement on the part of the defendant.

The court denied the request and the defendant excepted. Record, pages 127 and 128.

This request was repeated at the close of all the testimony. Exception No. 21, page 194.

We say this motion should have been granted on the ground stated. Mr. Brill himself stated (Record, page 29), concerning his alleged invention, "All I claim is a combination of old devices brought together for a new purpose, and a new result." His own opinion of the essential features of his alleged invention appears in his patent (Record, page 11), as follows: "The object of my invention is to increase the ease of operating the machine, diminish the noise and provide a means of readily adjusting the bearings of the

driving or fly wheel, so that it may always run true and without shaking."

It conclusively appears throughout Mr. Brill's testimony that his own idea was that the value of his invention lay in the reduction of friction and consequent ease of running, and in the ability to "take up lost motion" by adjusting the screws or point centers.

Now, can any dispassioned person contend that the Dewey device (Record, page 32), does not contain in combination the very elements of the Brill patent, inevitably adapted to reduce friction and take up lost motion more readily than devices without adjustable bearings? And does it not afford a complete anticipation? We of course understand how juries are prone to render verdicts in similar causes. Every lawyer knows why juries are demanded in equity cases, which they are least capable to properly try. But we cannot understand why, in view of the previous state of the art, a court could have failed to instruct the jury at the close of the plaintiff's case to bring in a verdict for the defendant, on account of the want of patentable novelty in the alleged invention. Or if a court had been justified in holding the alleged invention to have patentable novelty, how could it have held that the defendant infringed, when the claims of the patent are for combinations, pure and simple, and several of the elements thereof are not used by the defendant at all? It is to be remembered that the patentee is not entitled to the latitude of construction to which he would be entitled if he were the patentee of a primary invention.

McCormick *vs.* Talcott, 20 How., 405.
Railway Co. *vs.* Sayles, 97 U. S., 556.

One thing may be asserted with absolute certainty, and that is that if the alleged invention of Brill was not anticipated by
311 the anticipatory devices in evidence, then it was not infringed by the defendant, and either anticipation or non-infringement entitled the defendant to have the jury instructed to find for the defendant at the close of the plaintiff's case.

In other words, if the elements contained in the Dewey device, and which operated together to reduce friction, facilitate motion and facilitate the taking up of lost motion, just as in the plaintiff's patent, did not anticipate the plaintiff's patent, then the same elements operating together to accomplish the same results in the defendant's device (if contained there) did not infringe the plaintiff's patent.

In Randall *vs.* B. & O. R. R. Co., 109 U. S., 482, the Supreme Court says:

"It is the settled law of this court, that when the evidence given at the trial, with all inferences that the jury could justifiably draw from it, is insufficient to support a verdict for the plaintiff, so that such a verdict, if returned, must be set aside, the court is not bound to submit the case to the jury, but may direct a verdict for the defendant. Pleasants *vs.* Fant, 22 Wall., 116; Herbert *vs.* Butler, 97 U. S., 319; Bowditch *vs.* Boston, 101 U. S., 16; Griggs *vs.* Houston, 104 U. S., 553;" Robinson on Patents, sec. 1073.

Heald *vs.* Rice, 104 U. S., 737, was a patent case that was tried by a jury. Many of the facts are stated in the opinion of the Supreme Court in deciding the case. On pages 737 and 738, the court states the fact, that:

"A bill of exceptions sets out the exceptions of the defendant to the rulings of the court below, and all the evidence. The court was asked at the close of plaintiff's testimony, and again when all the evidence on both sides had been introduced, to instruct the jury to return a verdict for the defendant; the refusal to do, which, amongst other rulings, is assigned for error; and thus the whole case on the merits is brought here for review, so far as they rest upon questions of law."

The case at bar is in the same condition as was the case of Heald *vs.* Rice, and that at the close of the plaintiff's opening testimony, the defendant asked for an instruction that the jury bring in a verdict for the defendant, and the court refused the request. There was no subsequent testimony that made the plaintiff's case any better for him than it was when he closed his opening testimony.

In the Rice and Heald case exceptions were argued under three heads, and the second one of them was in effect that the testimony showed that the invention was anticipated by a former patent to one Morey. (See page 748 of the decision.) On page 753 of the decision, the Supreme Court proceeds to show that the Morey
312 patent was, in fact, an anticipation of the Rice patent sued on. At the close of its decision in that case the Supreme Court says:

"The court below, in its rulings upon objections to the introduction of the reissued patent of Rice, in its refusal to charge the jury as requested by the defendant, and in its charge as given, took views of the validity of the patent, on which the case of the plaintiff rested, which are opposed to those expressed in this opinion, and which necessarily resulted in the verdict and judgment against the defendant. For these errors the judgment must be reversed, with directions to grant a new trial; and it is so ordered."

The case of Fond du Lac County *vs.* May, 137 U. S., 395, was a case that was tried by a jury and taken to the Supreme Court on a writ of error. In that case, also, the defendant moved that a verdict be directed for it, which motion was made upon the ground that the patent was void for lack of novelty, and that the combinations described in it were not operative combinations, and were old and well-known devices applied to similar uses. The motion was overruled and the defendant excepted. In its decision the Supreme Court examined the facts of the case and decided that the patent was void. Page 402 of the case shows that the instructions were asked for and refused. On page 403 the Supreme Court says:

"We are of the opinion that the court ought to have directed a verdict for the defendant, on the ground that the patent was void, and that the judgment must be reversed."

The next case in the same volume is May *vs.* Juneau County. It was another suit at law brought upon the same patent.

At the close of the testimony the defendant moved for an instruc-

tion to the jury to bring in a verdict for the defendant upon other grounds than that the patent was void. The court granted the motion and the plaintiff carried the case to the Supreme Court on a writ of error. The Supreme Court affirmed the judgment and held that the court was right in giving the instruction, because, as the Supreme Court held, the patent was void. That although the instruction was not asked for upon that ground, still the defendant could urge that ground at any time, and the motion was broad enough to cover the invalidity of the patent although that ground was not then distinctly urged. That "want of patentability is a defense though not set up in an answer or plea." Citing several of its own decisions.

Our object in referring to these authorities is to prove that when the testimony shows that the patent is invalid and the trial court is asked to charge the jury to find for the defendant, that it is error for such court to refuse the instruction, and that the appellate court will reverse the judgment entered in the plaintiff's favor in such a case and order a new trial.

313 We also claim that when the testimony is construed as strongly as possible in the plaintiff's favor and every fact which he undertakes to prove is taken to be true, if then the evidence proves the patent to be invalid, that the applying of the facts to the patent becomes a question of law, and if the lower court refuses to do so and declare the patent void, when the undisputed facts so show it, that such refusal is an error for which the appellate court will reverse the judgment and grant a new trial.

The facts in the case at bar show the patent to be invalid and the case to be within the rule established by the decisions above referred to.

The plaintiff has testified as to what conception of his own was embodied in his alleged invention; he has identified those things which appear to him to be the distinguishing characteristic of his "invention"—the things which appear to him to give his device specific inventive individuality, as it were. Thus:

He says in his patent (Record, page 11): "The object of my invention is to increase the ease of operating the machine, diminish the noise, and provide a means of readily adjusting the bearings of the driving or fly wheel, so that it may always run true and without shaking."

The elements of his claims appear on page 12.

The very gist of his invention was to make the machine run easily, and take up lost motion. Record, page- 13, 15.

He may have thought that he was the first man to apply adjustable bearings to the fly-wheel mechanism of a machine, as he says. Record, page 19.

It was the combination only which he claimed—not the specific elements. Record, page- 29, 37.

Now, compare his claims, and his own statements as to what his invention really was, with the Dewey sewing-machine apparatus (Record, page 32), and a most complete anticipation is found. There is the fly-wheel, the arm or crank, the brackets or standards sustaining the intervening mechanism, and the adjustable bear-

ings. If the standard C of the Dewey device is not an equivalent of the plaintiff's bracket B, how then can the defendant's brace be an equivalent of the plaintiff's bracket? It is a very poor rule that would not work both ways in this case.

This Dewey device contains obviously within itself the very elements to which the plaintiff ascribes the novel and beneficent results of his "invention." The adjustable bearings or screw points of the Dewey device, as shown in its drawings, are adapted to "take up lost motion," and to make the crank and wheel run more steadily, just as much as the same things are adapted to accom-
314 plish these results in plaintiff's arrangement. The difference in the length of the crank, we submit, is not a patentable difference; the difference between a long crank and a short crank is simply the difference between a short crank and a long crank, and that is all there is to it. The most "ordinary skill" of the most ordinary mechanic would suggest the use of the adjustable bearings shown in the Dewey device for the very purpose for which Brill used them.

Adjustable bearings are again shown in the Presbrey device, Record, page 35, and again in the Dayton & Mallory device, page 38. See plaintiff's testimony, page 37.

We think the testimony of the witnesses for the plaintiff, in connection with the exhibits introduced before the plaintiff rested, completely negatived the idea that there was any original invention, or any inventive originality, in the plaintiff's conception, according to his own statements of that conception, or any patentable novelty in his device.

That adjustable point centers, as applied to the crank of a fly-wheel, and adapted to take up lost motion, and to increase the ease of running over prior devices, were in common use long before the meteoric display of inventive skill on the part of Andrew Brill, we think is clearly shown by the testimony of the plaintiff himself, on pages 28, 29, 37, 42, 43, 44, 68 of the Record; by the cross-examination of the witness Brown, especially at pages 87, 88, 89, 90; by the testimony of the witness Thompson, especially at pages 112, 113, and in fact by all the testimony in the plaintiff's case-in-chief.

If the court will examine the plaintiff's testimony on page 41, it will be seen that the plaintiff himself admits the anticipation of his second claim by the Presbrey and Dayton & Mallory lathe devices. We italicize:

"Q. Then do I understand what is described in this second claim, *if you left out the question of construction entirely*, is the same thing which is shown in the two patents mentioned, Defendant's Exhibits Two and Three?

"*A. Yes, sir.*

"*Q. It would be the same thing outside of the question of construction?*

"*A. Yes, sir; it would.*"

It will be seen by this testimony of the plaintiff, as well as by his testimony elsewhere, that the difference between his invention and prior devices is, in his own opinion, as it is in fact, *a difference in*

construction only. Now, it makes no difference whether the anticipating device was applied to a *lathe* or to a *sewing machine.* There is no invention in "the application of an old process, or machine, or apparatus to a similar or analogous subject, with no change in the manner of application, and no result substantially distinct in its nature."

315 This transposition of an old process, or machine, or apparatus, requires perhaps some degree of mechanical skill, but does not "call the inventive faculty into play."

In the case of St. Germain *vs.* Brunswick, 135 U. S., 230, the patent was for a billiard-cue rack, arranged to revolve. The Supreme Court held the patent to be void for want of novelty, and said:

"Revolving contrivances, such as table casters and the like, for the reception and carriage of articles, so as to bring them easily within reach, were well known, and the application of such a contrivance to the holding and carrying of cues was but the application of an old device to a new and analogous use, with such changes only as would naturally be made to adapt it thereto.

"The state of the art, as shown by the prior patents for revolving dining tables and bottle casters, introduced on behalf of defendant, illustrates the correctness of this conclusion. These tables and casters were so arranged as to revolve about a common center and bring around dishes and decanters in that way, as desired. The office performed was the same in respect to dishes and decanters as that performed by complainant's contrivance in respect to cues. The difference between revolving and stationary tables and casters and between revolving and stationary cue racks is the same. Those revolve and these do not. We think that competent knowledge and skill in his calling on the part of an intelligent mechanic would have enabled him, on request, to construct the revolving billiard-cue rack in question, without calling the inventive faculty into play."

In the case at bar, not only does the contrivance of plaintiff's patent appear in the prior sewing-machine device of Dewey (Record, p. 32), but also in the prior needle-bar device of the Florence machine (Record, p. 43), and also in the prior Presbrey lathe device (Record, p. 35), and also in the prior Dayton & Mallory lathe device (Record, p. 39). *And in every one of these instances the mechanism was adapted to produce the same ease of motion claimed for the plaintiff's device, and the adjustable bearings were, equally with those of plaintiff's device, adapted to take up lost motion.* The very essence of plaintiff's "invention"—his conception, as defined by himself—was embodied in and portrayed by these prior devices.

If, in view of the Dewey sewing-machine mechanism, it can be said that the plaintiff's use of old devices was a *new* use *in sewing machines*, then the most that can be said is that he applied "an old device to a new and analogous use, with such changes only as would naturally be made to adapt it thereto."

316 The application of an old device to a new and analogous use was also discussed in Royer *vs.* Roth, 132 U. S., 204. The patentee had adapted an automatic shifting device to a full-

ing machine. It appeared that an automatic shifting device of the same kind had previously been attached to a washing machine. The court held that its application to the fulling machine did not require the exercise of invention, and said:

The only difference between the shifting device made by Clerc for the washing machines, and that made by him for the plaintiff, was that in the washing-machine reverser the screw-shaft was driven by two gears, one on each end of it, while the one described in the patent is driven by a belt; and that the washing machine was horizontal, while the plaintiff's machine was upright, in consequence of which the horizontal machine required a spur gear, while the upright machine had a bevel gear. But these changes were such as any skillful mechanic could make."

This case seems conclusive upon any claim to invention that the plaintiff advances as to the "bracket" or the "arm" of his patent, or to such other changes as he would naturally make to adapt the old device to his use.

Non-infringement is equally clearly shown. Subjecting the combination claims of the plaintiff's patent to the rules of construction applied to such claims by the United States Supreme Court in similar cases, and the omission of a single one of the elements of plaintiff's combination from defendant's device exonerates the latter from the charge of infringement. The defendant has not made use of the plaintiff's bracket B, his arm E, nor his screw G. And as the court has seen from previously cited cases, the plaintiff, a combination claimant himself, cannot avail himself of the doctrine of mechanical equivalents to suppress a rival combination.

In view of the facts, and for these reasons, we contend that the motion of defendant contained on pages 127–'8 of the Record should have been granted at the close of the plaintiff's case.

For still stronger reasons the request of defendant contained on page 194 of the Record (exception No. 21) should have been granted. The testimony of Mr. Bell, a disinterested witness, and one shown to be exceedingly competent, was conclusive upon the question of anticipation. See, especially, Record, pages 145, *et seq.*

Upon the question of damages the defendant complains of errors shown under six of the assignments of errors, viz., from assignment of errors number 46 to number 50, both inclusive, being instructions which the defendant requested the court to give, and also assigns as error the giving of the instruction set forth in number 67 in the assignment of errors.

Where the jury found a basis for estimating the damages
317 as they did is a question involved in some obscurity. The testimony of the plaintiff upon the question of damages is to be found in the Record at pages 22 to 25. On page 23 he says that the difference in cost between his "wheel" and any other in use was "from ten to eighteen cents" in favor of his "wheel." On pages 24 and 25 he says that *he* manufactured his "wheel" at a cost of fifty cents and sold it for three dollars, leaving a difference of two and one-half dollars, and upon this testimony the court based its instruction to the jury (Record, p. 224).

Now, assuming the total number of machines sold by the defendant to have been 33,361, if the jury had made the $2.50 a basis upon which to estimate damages, as instructed by the court, they would have given the plaintiff $83,402.55. If they had taken the plaintiff's estimate of the difference of the cost of his "wheel" and others—10 to 18 cents—they would have given him from $3,336.10 to $6,004.98. An investigation shows that they made their basis of calculation *thirty* cents to the machine, and found a verdict accordingly. There seems to be no other reason for this than the disposition often shown by juries to "give the plaintiff something," and fix that "something" at a figure which to the apprehension of the jury appears good, regardless of the evidence.

The verdict, however, does show that the jury were confused by the instructions on the question of damages, and that their confusion is evinced by a verdict entirely unwarranted by anything in the evidence. The only instruction under which so large damages could be given was the enormous instruction contained in defendant's exception, No. 67, and under any other instruction the damages were excessive.

We contend that the court erred in giving the instruction covered by the 67th assignment of errors. That instruction was as follows:

"If you believe from the evidence that the plaintiff made and sold these patented devices for three dollars each, and that they only cost him fifty cents each, thereby leaving him a profit of $2.50 each, this forms a basis from which you may estimate the damages in this case."

The only evidence which relates in any way, shape or manner to this question, is contained in the testimony of the plaintiff, on page 24 of the Record, where he says that he sold his "wheel" to parties having the Singer machines, that he got three dollars for it, and that it cost him to manufacture it the sum of fifty cents. He says: "I made my patented wheel on point centers with adjustable bearings." He thinks that he sold from two to three thousand, but is not positive. It is from this testimony alone, which, to say the least, is doubtful, that the court has formulated the above-quoted instruction.

318 The first thing to be considered in this connection is, did the plaintiff sell his entire combination, or did he only sell a particular part of it; and, second, is there any evidence whatever going to show that the defendant, by reason of having the alleged patented devices in its machines, made any profit on them or controlled the market? One thing is certain, either the plaintiff, in putting his alleged "patented wheel on point centers with adjustable bearings" in Singer machines, had to use as one of his elements the brace and legs already in the machine, in which case he charged $3 for a part of his combination, or else he had to put a bracket in, in addition to the brace already in the machine. It is an impossibility for the plaintiff to put the devices described in the specification and shown in the drawing of his patent, into any Singer machine without remodeling the machine. It may be true that

the plaintiff's wheel cost him only fifty cents to manufacture, but how the defendant should be obliged to pay him $2.50 for every wheel put in the 30,000 odd machines sold in this district is not so apparent. There is not an iota of evidence in the record going to show that the defendant made any such sum, or that it made any sum whatever by reason of having in its sewing machines the alleged infringing device. And, on the other hand, the record is equally barren of proof showing, or tending to show, that if the defendant had not sold its machines in this market the plaintiff would have done so. If we assume it to be true that Brill did, in fact, sell his patented wheels to as many as two or three thousand people, it does not, therefore, follow that in the field of selling sewing machines, the machines which have been made and sold by the defendant are liable to profits to the extent of $2.50 each, nor that the plaintiff could supply, or should be allowed to claim, that he could supply the market. There are upwards of thirty sewing machine companies in the United States selling sewing machines, and if the instruction hereinabove quoted is good in this case, it would be equally good in any suit brought either against one or against all the sewing machine companies, and the plaintiff would be able to recover damages against each and every one of them at the rate of $2.50 per each wheel they may use, if it was on point centers with adjustable bearings.

This instruction is erroneous in another point of view. It ignores the combinations for which each claim of the patent calls. If it be assumed that the patented devices refer to the first claim of the patent, it may not refer to the second, and if it refers to the second it may not refer to the first. The plaintiff says, "I made my patented wheel on point centers with adjustable bearings. It costs fifty cents to make it." This may be all true and
319 yet it may not be covered by the first claim of the patent, and if it is not then the instruction was erroneous, because it failed to show what proportion of this $2.50 is due to the patented feature covered by the second claim, and what to the part covered by the first claim.

Proctor *vs.* Brill, 4 Fed. Rep., 415.
Wooster *vs.* Simonson, 16 Fed. Rep., 680.
Moffitt *vs.* Cavanaugh, 27 Fed. Rep., 511.

Brill is not, according to the testimony in this case, the inventor of a wheel, of point centers, or of adjustable bearings. These were all old, not only separately, but in combination as well. As said in Seymour *vs.* McCormick, 16 Howard, 480, damages are not to be awarded "upon the principle, that if the defendant had not interfered with the patentee, all persons who bought the defendant's machines would necessarily have been obliged to go to the patentee and purchase his machine."

The measure of damages is further erroneous in that it goes into the domain of speculation. There is no evidence showing that if the Singer Company had not manufactured its machines with the alleged infringing devices in them, the plaintiff would have done

so. Brill manufactured no machines. He says that he put his wheel into the Singer machine already in the market. From this it would appear that when the Singer Company made a machine the plaintiff got a market for his wheel, up to the extent of two or three thousand, and he seems to have confined the use of his invention to these machines alone.

The case of Goodyear *vs.* Bishop, 2 Fisher's Patent Cases, 154, is one peculiarly in point. In that case the plaintiffs contended that they could have realized in profit the sum of $27,000 if they had made and sold the article made and sold by the defendant.

The court instructed the jury on page 159 as follows: "But I do charge you that although the *plaintiffs might have made* $27,000 profits IF they had made and sold these goods which the defendants manufactured and sold, that *is by no means conclusive evidence* that $27,000 is the actual damages they are entitled to recover."

The instruction in our case entirely ignores the principle of proof of actual damage, but instead goes into the field of speculation and conjecture. It is in sharp conflict with the instruction quoted above. In that case the plaintiffs claimed that if the defendants had not manufactured the machines they would have made $27,000; in this case the plaintiff contends that if the defendant had not manufactured its machines, he would have done so, and that therefore he is entitled to recover $2.50 for each machine manufactured and sold. In the Goodyear case the court charged the jury that although the plaintiffs might have
320 made the profit stated, yet it was by no means conclusive evidence of the actual damages they were entitled to recover. In the case at bar, the lower court, without any qualification whatever, instructed the jury that if the sale of plaintiff's "*patented devices*" left him a profit of $2.50 on each, this forms a basis from which they may estimate the damages in this case. The books may be searched in vain for an instruction so misleading, or so far-reaching in its effect against a defendant. If it be law, it leaves out of consideration all question of proof, all the necessary data upon which to base a calculation or estimate of damages. The defendant may have lost money, it may have had no intention whatever of infringing, it may never have heard of a patented device, and yet it may under this instruction be held for profits it never made, for damages unproven. The plaintiff is under it allowed to come into court, swear that he sold his patented devices, whether few or many, at a certain sum, and at a certain place, and that he made a certain profit, and the defendant is therefore to be held for that profit, without proof that it could have made or did make any profit whatever.

We say that this instruction, from any point from which it can be viewed, is erroneous and misleading, and is opposed to the rules of law as laid down both by text writers and decisions.

The defendant's profits may in cases become the criterion of a plaintiff's loss; but nowhere do we find that where defendant is not

shown to have made any profit he can be held for what the plaintiff may have speculatively lost.

"Actual damages," says the Supreme Court of the United States in Seymour *vs.* McCormick, 16 Howard, 490, "must be actually proved, and cannot be assumed as a legal inference from any facts which amount not to actual proof of the fact. The question is not what speculatively he may have lost, but what actually he did lose."

In the case at bar the instruction given is justly subject to the same criticism as made in Seymour *vs.* McCormick, *supra*. It is "better entitled to the epitaph of 'speculative,' 'imaginary,' or 'fanciful,' than 'actual.'"

See also New York *vs.* Ransom, 23 How., 490.
Mowry *vs.* Whitney, 14 Wallace, 621.
Philp *vs.* Nock, 17 Wallace, 460.
Birdsall *vs.* Coolidge, 93 U. S., 64.
Blake *vs.* Robertson, 94 U. S., 728.
Garretson *vs.* Clark, 111 U. S., 120.
Black *vs.* Thorne, 11 U. S., 122.
Dobson *vs.* Carpet Company, 114 U. S., 445, and cases there cited.

321 The lower court also erred in assuming facts not shown by the evidence, and by assuming and presuming that the defendant's machines displaced the patented devices of the plaintiff to the extent of the defendant's sales, and instructing the jury that the plaintiff was entitled to two and a half dollars profit upon each machine sold by the defendant. The court had no right to assume that the plaintiff would have sold his patented devices in place of the defendant's if the latter had not existed. And there is not a scintilla of testimony which goes to show that even one individual in the northern district of California would have bought a machine with the plaintiff's alleged invention therein contained, nor is there any evidence that the use, if the defendant has used it, of the alleged invention added anything to the defendant's price, or that it promoted the sale of the defendant's machines, and no evidence at all to show what part of the defendant's price was to be attributed to the patented devices. Such being the case, the rule of law laid down by the United States Supreme Court in Dobson *vs.* Dornan, 118 U. S., pages 17 and 18, is directly in point. The court there said:

"In the present case the master found that the plaintiffs' profit on their carpets was a certain percentage, and *assumed or presumed* that the defendants' carpets, which were far inferior in quality as well as in market value, displaced those of the plaintiffs, to the extent of the sales by the defendants, and held that the entire profit which the plaintiffs would have received, at such percentage, from the sale of an equal quantity of their own carpets of the same pattern was the proper measure of damages. The defendants' carpets were so inferior in quality that they sold them at a much less price than the plaintiffs got for their carpets, and even at those prices the defendants made no profits. Under these circumstances there can be

no presumption that the plaintiffs would have sold their better quality in place of the defendants' poorer quality if the latter had not existed, or that the pattern would have induced the purchasers from the defendants to give to the plaintiffs the higher price. On the contrary, the presumption is at least equal that the cheaper price, and not the pattern, sold the defendants' carpets. There was no satisfactory testimony that those who bought the cheap carpets from the defendants would have bought the higher priced ones from the plaintiffs, or that the design added anything to the defendants' price or promoted their sale of the particular carpet; and none to show what part of the defendants' price was to be attributed to the design," and the court reversed the judgment, with directions to give a judgment for six cents damages.

Roemer *vs.* Simon, 31 Fed. Rep., 41.
Everest *vs.* Lubricating Co., 31 Fed. Rep., 742.

322 Many other cases might be cited which bear out the contentions herein made.

The instruction requested by the defendant, and embodied in assignment of errors No. 46 (Record, p. 243), was one of the proper and authorized rules for the measure of damages in cases of this kind, and is sustained by the text of Walker on Patents, sec. 555, and by numerous adjudged cases. It is to be remembered that the plaintiff's device is only a *specific part* of a machine. Defendant is not charged with manufacturing and selling infringing *machines*, but machines containing the plaintiff's device. If the plaintiff's patent was for an entire machine, and the defendant infringed by manufacturing and selling that entire machine, one rule for the measure of damages would be the profits derived by the infringer on the entire machine. But such is not *this* case, and the measure of damages, so far as the question of *profit* is concerned, must, in this case, be based upon the benefits derived from the adoption of the specific improvement. In such cases "the patentee must in every case give evidence to separate or apportion the defendant's profits and the patentee's damages between the patented feature and the unpatented features, and such evidence must be reliable and tangible, and not conjectural or speculative." The instruction should therefore have been given.

Garretson *vs.* Clark, 111 U. S., 120.
Dobson *vs.* Dornan, 118 U. S., 17.

The 47th error assigned by the defendant is the failure of the court to give the following requested instruction:

"Another method of assessing damages is for the plaintiff to prove that he has lost sales of his invention on account of the infringement. In order for the plaintiff to rely upon this rule, he must first prove that he lost sales on account of the infringement, and in addition to such proof, he must also prove how much he has lost in money on account of the loss of such sales."

This instruction, which covers an elementary rule of patent law,

that lost sales, while an element of damages must be proven, ought to have been given.

Walker on Patents, section 563.
Seymour *vs.* McCormick, 16 How., 490.
Dobson *vs.* Dornan, 118 U. S., 18.

The 48th error assigned by the defendant is the failure of the court to give the following requested instruction:

"Another rule for assessing damages is for the plaintiff to prove that he had an established royalty, for which he sold to others the right to use his invention, and which others paid to
323 him for such right. In this case the plaintiff has not proved any established royalty for the use of his invention, and the jury must not assess damages upon the basis of a royalty for the use of the invention."

This instruction should have been given. The testimony of the plaintiff affirmatively shows that he had no established royalty covering his alleged invention. Such being the case, the jury should have been instructed that they should not assess damages against the defendant upon the basis of a royalty.

Walker on Patents, section 555, says:

"There are several methods of assessing damages for infringements of patents. One of those methods consists in using the plaintiff's established royalty as the measure of those damages." That royalty must be uniform, and be actully paid or secured before infringement committed, before it can be relied on as a basis for the estimation of damages against an infringer.

Rude *vs.* Wescott, 130 U. S., 165.

The 49th and 50th assignments relate to the proof necessary to be introduced by the plaintiff before he can recover more than nominal damages.

There must be some data upon which to rest a basis for the estimation either of profits or damages; if the plaintiff is unable to prove how much money he has lost, or if he fails to show that the defendant made a profit, then of course he cannot recover more than nominal damages. As said by the Supreme Court in New York *vs.* Ransome, 23 Howard, 487, 488:

"Actual damages must be calculated, not imagined, and an arithmetical calculation cannot be made without certain data on which to make it."

In connection with the question of damages, we submit that the court erred in overruling the motion of defendant to strike out the testimony of witness A. C. Brown (assignment of error 6, Record, p. 96), and in overruling defendant's objection to the question as to value asked the witness G. M. Glover (specification of error 9, Record, p. 101). Mr. Brown testified (Record, pp. 95–97) that the value of the Brill device on a sewing machine was five dollars. Mr. Glover testified that its value was between three and five dollars. In each instance the testimony was given without any proof of information within the knowledge of the witness upon which he could

base a competent opinion. In each instance the opinion was speculative—the mere guess of the witness. The testimony could have had no other purpose nor bearing than to affect the question of damages in the minds of the jury, and was calculated to prejudice the
324 jury upon that question. The evidence was guess-work, and it was logically followed by guess-work in the verdict. Speculative opinions are not competent to prove damages. The necessary data for their computation must be shown.

3 Robinson, 1071 and notes.

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Counsel for Plaintiff in Error.

325 "EXHIBIT C."

No. 49.

United States Circuit Court of Appeals for the Ninth Circuit.

THE SINGER MANUFACTURING COMPANY, Plaintiff in Error,
vs
A. BRILL, Defendant in Error.

Plaintiff in Error's Petition for a Rehearing.

M. A. Wheaton, I. M. Kalloch, F. J. Kierce, Charles K. Offield, F. M. Husted, counsel for plaintiff in error.

326 United States Circuit Court of Appeals for the Ninth Circuit.

THE SINGER MANUFACTURING COMPANY, Plaintiff in Error,
vs.
A. BRILL, Defendant in Error.

Petition for a Rehearing by Plaintiff in Error.

Now comes the above-named plaintiff in error and respectfully petitions this honorable court to grant a rehearing in the above-entitled cause, and for cause thereof says:

One of the strongest grounds on which the plaintiff in error relied on the hearing of the appeal in this case was that error had occurred in the court below in refusing to give to the jury the instructions asked for upon the question of damages, and in its giving of one instruction upon the same subject. Commencing near the bottom of page 47 of the brief of the plaintiff in error which was filed on the hearing of this case in this court it says:

"Upon the question of damages the defendant complains of errors shown under six of the assignments of errors, viz., from assignment of errors number 46 to number 50, both inclusive, being instructions which the defendant requested the court to give, and also assigns as error the giving of the instruction set forth in number 67, in the assignment of errors."

From this beginning on page 47, to the end of the brief
327 on page 55, we urged upon the attention of the court the errors in regard to the instructions asked for and refused and the instruction that was given, as well as rulings in admitting and in refusing to strike out evidence introduced by the plaintiff upon this question of damages, and cited some twenty different authorities to sustain our contention.

In its written decision, which was rendered by this court, not a word is said in regard to this part of our argument. In deciding the case the court did not once mention the subject of damages, except in stating what the verdict of the jury was. We especially urge upon the attention of the court this branch of the case, and respectfully ask the court to give it a due consideration.

In another case that was before this court, in which we were counsel for the plaintiffs in error, we had nearly or quite the same contention to sustain and cited on the appeal in that case very many of the same authorities that we cited in our brief in this case. That case, like the present one, was an action at law, brought to recover damages for an alleged infringement of a patent, and had been tried by a jury in the lower court. The case was Hunt Bros. Fruit Packing Co. *vs.* Cassidy. The decision of this court in that case is reported in 53 Fed. Rep., 257.

In that case our authorities were considered good and the judgment of the circuit court was reversed solely on questions regarding the damages. We think the same authorities are equally applicable to this case. That case was decided by Judges McKenna, Ross and Knowles. This case was decided by Judges McKenna, Gilbert and Knowles. In that case the defendant had requested the
328 circuit court to instruct the jury that "under the evidence presented, the plaintiff could not recover more than nominal damages, if any." The court refused to give the instruction and for this refusal the judgment was reversed by this court. In the Cassidy case the patent, which was on a fruit-dryer, had two claims, but only one of the claims had been infringed. The evidence as to damages consisted of evidence of a license fee which he had fixed for both of his devices, and evidence of the profit to be made in manufacturing fruit-dryers containing both of the improvements covered by both of the claims, and also certain unpatented features. This court in its decision says:

"The authorities are full upon the point that a party cannot recover as damages the profits to be derived from the manufacture of the whole of a machine, when only a portion of the same contains a patented feature."

This court further decides in that case that "the burden of proving damages for the infringement of a patent is upon the plaintiff, and he must establish his damages by competent evidence, and they must not be left to be surmised or arrived at from conjecture by the jury." Also:

"The proof of the license fee for two improvements in fruit-dryers is not competent, in order to show the damage sustained by an infringement of one of these improvements." The court further says:

"Plaintiff's evidence was of such a character, then, in our opinion, as not to give the jury the means of arriving at any more than nominal damages for plaintiff. The damages found cannot
329 be deduced from any evidence in the case, but must have been reached by surmise or conjecture, and the evidence was not of the character to have warranted the same. It was, therefore, error in the court below to have refused plaintiff in error's request to instruct the jury that they could find only nominal damages for plaintiff. For this error the judgment of the court below is reversed and set aside, and the cause remanded for further proceedings."

The court sustained its decision by a copious citation of authorities upon each point.

In the case at bar the patent sued upon has two claims. This court in its decision, however, has pronounced the second claim of the patent to be invalid, for the reason that by comparing this second claim of the patent with the combinations found in older patents that were put in evidence it was seen that the combination of the claim was anticipated.

This second claim was the broad claim of the patent. The first claim was for a specific combination of devices. The defendant denied that they had infringed the first claim of the patent and introduced evidence which proved that the combination of the first claim had not been infringed. This first claim was as follows:

"The combination of the wheel C, arm E, bracket B, standard H, and screws F G, substantially as and for the purpose shown and specified." Now it was an admitted fact that the defendant did not have two screws F G, and it was proved that without the two screws there could not be any adjustment of the bearings of the driving or fly wheel. The patent says: "The object of my invention
330 is to increase the ease of operating the machine, diminish the noise, and provide a means of readily adjusting the bearings of the driving or fly wheel, so that it may always run true and without shaking."

While with only one screw the bearings of the fly-wheel could be tightened, and the lost motion taken up, it was yet true, and Brill himself so testified that those bearings could not be adjusted. There was no adjusting screw nor any equivalent of an adjusting screw at one of the defendant's bearings. This was a conceded fact and appeared all the way through the plaintiff's testimony, which was given to show what the defendant had used. The combination of the first claim of the patent was not in the defendant's machine, as a matter of cold fact. At least the infringement of the first claim was denied by the plaintiff in error, and we assert that this court has no good ground for supposing, and certainly not for holding, that the jury ever decided that this first claim was infringed. The court has no means of knowing that the jury did decide that the defendant infringed the first claim of the patent. For all that the court can tell the jury may have decided according to the fact and the law, and if so it must have decided that the first claim was not infringed. The second claim was very broad, and it is very prob-

able that the jury decided that it was the second claim that was infringed and may have, and probably did, give all the damages for the infringement of the second claim alone.

Now, since the court has decided that the second claim is invalid and void, it seems to us that the decision of Hunt Bros. *vs.*
331 Cassidy is directly in point upon this question of damages. Both cases were tried by a jury. Both patents had two claims. In the Cassidy case only one claim had been infringed, but the jury were left to ascertain the damages upon both of the claims, and this was held by this court to be error. In the present case one claim was invalid, but the jury were left to ascertain the damages upon both the claims, and we cannot understand why it is not just as much error for the jury to be allowed to find the damages upon both claims in this case as it was in the Cassidy case. If the claim was invalid the plaintiff had no more right to recover damages for its infringement than he would have had to recover damages for the infringement of a claim that was not infringed.

In the Cassidy case this court says:

"The authorities are full upon the point that a party cannot recover as damages the profits to be derived from the manufacture of the whole of a machine, when only a portion of the same contains a patented feature."

Now, since Brill's patent was for an apparatus in which only a portion thereof contained a patented feature, the above rule applies. By the second claim of the patent Brill had undertaken to claim the "combination, with a driving or fly wheel of adjustable bearings, substantially as and for the purpose shown and described" in his patent. Those adjustable bearings were the pointed screws in conical bearings, and they were shown to be the common property of the world when used in combination with driving and fly wheels almost from time immemorial, and that claim of the patent was invalid. Yet the jury assessed the damages upon that claim as
332 well as upon the other claim, and that was the most valuable of the two claims, since it was that combination that gave the apparatus all the advantages claimed for it in the specifications of the patent, viz.: it increased the ease of operating the machine; it diminished the noise, and provided a means of readily adjusting the bearings of the driving or fly wheel."

We repeat that there is nothing in the case that justifies this court in saying or in holding that the jury assessed the damages upon the first claim alone and not upon both the claims. If the first claim had been invalid and the second claim good, there would have been much more reason for holding that all the damages were assessed upon the second claim, since it is the combination that is covered by that claim that gives to the apparatus all of the benefits that are declared in the specifications to be of advantage.

We here emphasize this statement by calling the attention of the court to the record upon this point. As we said in our original brief:

"The only evidence which relates in any way, shape or manner to this question, is contained in the testimony of the plaintiff, on

page 24 of the Record, where he says that he sold his 'wheel' to parties having the Singer machines, that he got three dollars for it, and that it cost him to manufacture it the sum of fifty cents. He says: I made my patented wheel on point centers with adjustable bearings. He thinks that he sold from two to three thousand, but is not positive. It is from this testimony alone, which, to
333 say the least, is doubtful, that the court has formulated the above-quoted instruction."

From this very testimony of Brill himself it appears that he sold his "wheel," "on point centers with adjustable bearings," and on this he made his profit. Yet this is the very combination of the second claim which the court has declared to be invalid. As this was the testimony upon which the court formulated the objectionable instruction, there seems to be some reason for supposing that the jury based its verdict for all the damages upon an infringement of this invalid second claim; but there is no reason for supposing that it based its finding for all the damages upon an infringement of the first claim. One especial reason at least precludes such theory, and that is, that there is not a particle of testimony in the record tending to show what the damages would be for the infringement of the first claim of the patent. The court may inspect the record ever so critically, and it will look in vain for any evidence upon which the jury could base any finding of money value for the first claim, or upon which it could predicate a verdict for damages for an infringement of it. We can see no alternative except to grant a rehearing in this case or else to hold that the plaintiff in error is an outlaw, and that it shall not have the protection of the laws of the United States. Now the instruction which was given to the jury which is shown under our sixty-seventh assignment of error—Record, page 249—is as follows:

"If you believe from the evidence that the plaintiff made
334 and sold the patented devices for three dollars each, and that they only cost him fifty cents each, thereby leaving him a profit of $2.50 each, this forms a basis from which you may estimate the damages in this case."

Here is a direct instruction to the jury that the profits which the plaintiff made upon each of the patented devices formed a basis upon *from* which they might estimate the damages.

We submit that this instruction is directly in the teeth of the decision in the Cassidy case, which says:

"The authorities are full upon the point that a party cannot recover as damages the profits to be derived from the manufacture of the whole of a machine when only a portion of the same contains a patented feature."

The above quotation is supported by the court by the citation of a list of authorities, and is beyond question the true law upon this point. We do not suppose that there is a patent lawyer of any reputable standing in the United States that will question the correctness of the above quotation as a rule of law. Either a rehearing must be granted herein or our client must be denied the benefit

of an elementary rule of law, and be placed by this court outside of the pale of legal protection.

So far we have been comparing the decision of this court in the Cassidy case with this case, and we ask that this court will at least make its own decisions uniform upon the same elementary question when it comes before it in different cases. In thus calling attention to the decision in the Cassidy case and showing that the decision in the present case is not in harmony with the decision in that
335 case, we do not abandon the former points made in our original brief on the argument of this case. When that brief was filed we did not know whether this court would, or would not, hold that the second claim of the patent was invalid. Now that such second claim is decided to be invalid, we have so much additional ground for urging that the foregoing instruction was error.

We here reprint what we said in our original brief upon this subject of damages:

"Upon the question of damages the defendant complains of errors shown under six of the assignments of errors, viz., from assignment of errors number 46 to number 50, both inclusive, being instructions which the defendant requested the court to give, and also assigns as error the giving of the instruction set forth in number 67 in the assignment of errors.

"Where the jury found a basis for estimating the damages as they did is a question involved in some obscurity. The testimony of the plaintiff upon the question of damages is to be found in the Record at pages 22 to 25. On page 23 he says that the difference in cost between his 'wheel' and any other in use was 'from ten to eighteen cents' in favor of his 'wheel.' On pages 24 and 25 he says that he manufactured his 'wheel' at a cost of fifty cents and sold it for three dollars, leaving a difference of two and one-half dollars, and upon this testimony the court based its instruction to the jury (Record, p. 224).

"Now, assuming the total number of machines sold by the defendant to have been 33,361, if the jury had made the $2.50 a basis upon which to estimate damages, as instructed by the court, they would have given the plaintiff $83,402.55. If they had taken
336 the plaintiff's estimate of the difference of the cost of his 'wheel' and others—10 to 18 cents—they would have given him from $3,336.10 to $6,004.98. An investigation shows that they made their basis of calculation thirty cents to the machine, and found a verdict accordingly. There seems to be no other reason for this than the disposition often shown by juries to 'give the plaintiff something,' and fix that 'something' at a figure which to the apprehension of the jury appears good, regardless of the evidence.

"The verdict, however, does show that the jury were confused by the instructions on the question of damages, and that their confusion is evinced by a verdict entirely unwarranted by anything in the evidence. The only instruction under which so large damages could be given was the erroneous instruction contained in defendant's exception No. 67, and under any other instruction the damages were excessive.

"We contend that the court erred in giving the instruction covered by the 67th assignment of errors. That instruction was as follows:

"'If you believe from the evidence that the plaintiff made and sold these patented devices for three dollars each, and that they only cost him fifty cents each, thereby leaving him a profit of $2.50 each, this forms a basis from which you may estimate the damages in this case.'

"The only evidence which relates in any way, shape or manner to this question, is contained in the testimony of the plaintiff, on page 24 of the Record, where he says that he sold his 'wheel' to parties having the Singer machines, that he got three dollars for it, and that it cost him to manufacture it the sum of fifty cents.
337 He says: 'I made my patented wheel on point centers with adjustable bearings.' He thinks that he sold from two to three thousand, but is not positive. It is from this testimony alone, which, to say the least, is doubtful, that the court has formulated the above-quoted instruction.

"The first thing to be considered in this connection is, did the plaintiff sell his entire combination, or did he only sell a particular part of it; and, second, is there any evidence whatever going to show that the defendant, by reason of having the alleged patented devices in its machines, made any profit on them or controlled the market? One thing is certain, either the plaintiff, in putting his alleged 'patented wheel on point centers with adjustable bearings' in Singer machines, had to use as one of his elements the brace and legs already in the machine, in which case he charged $3 for a part of his combination, or else he had to put a bracket in, in addition to the brace already in the machine. It is an impossibility for the plaintiff to put the devices described in the specification and shown in the drawing of his patent, into any Singer machine without remodeling the machine. It may be true that the plaintiff's wheel cost him only fifty cents to manufacture, but how the defendant should be obliged to pay him $2.50 for every wheel put in the 30,000-odd machines sold in this district is not so apparent. There is not an iota of evidence in the record going to show that the defendant made any such sum, or that it made any sum whatever by reason of having in its sewing machines the alleged infringing device. And, on the other hand, the record is equally barren of proof showing, or tending to show, that if
338 the defendant had not sold its machines in this market the plaintiff would have done so. If we assume it to be true that Brill did, in fact, sell his patented wheels to as many as two or three thousand people, it does not, therefore, follow that in the field of selling sewing machines, the machines which have been made and sold by the defendant are liable to profits to the extent of $2.50 each, nor that the plaintiff could supply, or should be allowed to claim, that he could supply the market. There are upwards of thirty sewing-machine companies in the United States selling sewing machines, and if the instruction hereinabove quoted is good in this case, it would be equally good in any suit brought either against

one or against all the sewing-machine companies, and the plaintiff would be able to recover damages against each and every one of them at the rate of $2.50 per each wheel they may use, if it was on point centers with adjustable bearings.

"This instruction is erroneous in another point of view. It ignores the combinations for which each claim of the patent calls. If it be assumed that the patented devices refer to the first claim of the patent, it may not refer to the second, and if it refers to the second it may not refer to the first. The plaintiff says, 'I made my patented wheel on point centers with adjustable bearings. It cost fifty cents to make it.' This may be all true and yet it may not be covered by the first claim of the patent, and if it is not then the instruction was erroneous, because it failed to show what proportion of this $2.50 is due to the patented feature covered by the second claim, and what to the part covered by the first claim.

339 "Proctor *vs.* Brill, 4 Fed. Rep., 415.
"Wooster *vs.* Simonson, 16 Fed. Rep., 680.
"Moffitt *vs.* Cavanaugh, 27 Fed. Rep., 511.

"Brill is not, according to the testimony in this case, the inventor of a wheel, of point centers, or of adjustable bearings. These were all old, not only separately, but in combination as well. As said in Seymour *vs.* McCormick, 16 Howard, 480, damages are not to be awarded 'upon the principle, that if the defendant had not interfered with the patentee, all persons who bought the defendant's machines would necessarily have been obliged to go to the patentee and purchase his machine.'

"The measure of damages is further erroneous in that it goes into the domain of speculation. There is no evidence showing that if the Singer Company had not manufactured its machines with the alleged infringing devices in them, the plaintiff would have done so. Brill manufactured no machines. He says that he put his wheel into the Singer machine already in the market From this it would appear that when the Singer Company made a machine the plaintiff got a market for his wheel, up to the extent of two or three thousand, and he seems to have confined the use of his invention to these machines alone.

"The case of Goodyear *vs.* Bishop, 2 Fisher's Patent Cases, 154, is one peculiarly in point. In that case the plaintiffs contended that they could have realized in profit the sum of $27,000 if they had made and sold the article made and sold by the defendant.

"The court instructed the jury on page 159 as follows:

340 'But I do charge you that although the plaintiffs might have made $27,000 profits if they had made and sold these goods which the defendants manufactured and sold, that is by no means conclusive evidence that $27,000 is the actual damages they are entitled to recover.'

"The instruction in our case entirely ignores the principle of proof of actual damage, but instead goes into the field of speculation and conjecture. It is in sharp conflict with the instruction quoted above. In that case the plaintiffs claimed that if the de-

fendants had not manufactured the machines they would have made $27,000; in this case the plaintiff contends that if the defendant had not manufactured its machines, he would have done so, and that therefore he is entitled to recover $2.50 for each machine manufactured and sold. In the Goodyear case the court charged the jury that although the plaintiffs might have made the profit stated, yet it was by no means conclusive evidence of the actual damages they were entitled to recover. In the case at bar, the lower court, without any qualification whatever, instructed the jury that if the sale of plaintiff's 'patented devices' left him a profit of $2.50 on each, this forms a basis from which they may estimate the damages in this case. The books may be searched in vain for an instruction so misleading, or so far-reaching in its effect against a defendant. If it be law, it leaves out of consideration all question of proof, all the necessary data upon which to base a calculation or estimate of damages. The defendant may have lost money, it may have had no intention whatever of infringing, it may never have heard of a patented device, and yet it may
341 under this instruction be held for profits it never made, for damages unproven. The plaintiff is under it allowed to come into court, swear that he sold his patented devices, whether few or many, at a certain sum, and at a certain place, and that he made a certain profit, and the defendant is therefore to be held for that profit, without proof that it could have made or did make any profit whatever.

"We say that this instruction, from any point from which it can be viewed, is erroneous and misleading, and is opposed to the rules of law as laid down by both text writers and decisions.

"The defendant's profits may in cases become the criterion of a plaintiff's loss; but nowhere do we find that where defendant is not shown to have made any profit he can be held for what the plaintiff may have speculatively lost.

"'Actual damages,' says the Supreme Court of the United States in Seymour *vs.* McCormick, 16 Howard, 490, 'must be actually proved, and cannot be assumed as a legal inference from any facts which amount not to actual proof of the fact. The question is not what speculatively he may have lost, but what actually he did lose.'

"In the case at bar the instruction given is justly subject to the same criticism as made in Seymour *vs.* McCormick *supra*. It is better entitled to the epitaph of 'speculative,' 'imaginary,' or 'fanciful,' than 'actual.'

"See also New York *vs.* Ransom, 23 How., 490.
"Mowry *vs.* Whitney, 14 Wallace, 621.
"Philp *vs.* Nock, 17 Wallace, 460.
"Birdsall *vs.* Coolidge, 93 U. S., 64.
"Blake *vs.* Robertson, 94 U. S., 728.
342 "Garretson *vs.* Clark, 111 U. S., 120.
"Black *vs.* Thorne, 111 U. S., 122.
"Dobson *vs.* Carpet Company, 114 U. S., 445, and cases there cited.

"The lower court also erred in assuming facts not shown by the evidence, and by assuming and presuming that the defendant's machines displaced the patented devices of the plaintiff to the extent of the defendant's sales, and instructing the jury that the plaintiff was entitled to two and a half dollars profit upon each machine sold by the defendant. The court had no right to assume that the plaintiff would have sold his patented devices in place of the defendant's if the latter had not existed. And there is not a scintilla of testimony which goes to show that even one individual in the northern district of California would have bought a machine with the plaintiff's alleged invention therein contained, nor is there any evidence that the use, if the defendant has used it, of the alleged invention added anything to the defendant's price, or that it promoted the sale of the defendant's machines, and no evidence at all to show what part of the defendant's price was to be attributed to the patented devices. Such being the case, the rule of law laid down by the United States Supreme Court in Dobson *vs.* Dornan, 118 U. S., pages 17 and 18, is directly in point. The court there said:

"'In the present case the master found that the plaintiffs' profit on their carpets was a certain percentage, and assumed or presumed that the defendants' carpets, which were far inferior in
343 quality as well as in market value, displaced those of the plaintiffs, to the extent of the sales by the defendants, and held that the entire profit which the plaintiffs would have received, at such percentage, from the sale of an equal quantity of their own carpets of the same pattern was the proper measure of damages. The defendants' carpets were so inferior in quality that they sold them at a much less price than the plaintiffs got for their carpets, and even at those prices the defendants made no profits. Under these circumstances there can be no presumption that the plaintiffs would have sold their better quality in place of the defendants' poorer quality if the latter had not existed, or that the pattern would have induced the purchasers from the defendants to give to the plaintiffs the higher price. On the contrary, the presumption is at least equal that the cheaper price, and not the pattern, sold the defendants' carpets. There was no satisfactory testimony that those who bought the cheap carpets from the defendants would have bought the higher priced ones from the plaintiffs, or that the design added anything to the defendant's price or promoted their sale of the particular carpet; and none to show what part of the defendants' price was to be attributed to the design,' and the court reversed the judgment, with directions to give a judgment for six cents damages.

"Roemer *vs.* Simon, 31 Fed. Rep., 41.

"Everest *vs.* Lubricating Co., 31 Fed. Rep., 742.

"Many other cases might be cited which bear out the contention herein made.

"The instruction requested by the defendant and em-
344 bodied in assignment of errors No. 46 (Record, p. 243), was

one of the proper and authorized rules for the measure of damages in cases of this kind, and is sustained by the text of Walker on Patents, sec. 555, and by numerous adjudged cases. It is to be remembered that the plaintiff's device is only a specific part of a machine. Defendant is not charged with manufacturing and selling infringing machines, but machines containing the plaintiff's device. If the plaintiff's patent was for an entire machine, and the defendant infringed by manufacturing and selling that entire machine, one rule for the measure of damages would be the profits derived by the infringer on the entire machine. But such is not this case, and the measure of damages, so far as the question of profit is concerned, must, in this case, be based upon the benefits derived from the adoption of the specific improvement. In such cases 'the patentee must in every case give evidence to separate or apportion the defendant's profits and the patentee's damages between the patented feature and the unpatented features, and such evidence must be reliable and tangible, and not conjectural or speculative.' The instruction should therefore have been given.

"Garretson *vs.* Clark, 111 U. S., 120.

"Dobson *vs.* Dornan, 118 U. S., 17.

"The 47th error assigned by the defendant is the failure of the court to give the following requested instruction:

"'Another method of assessing damages is for the plaintiff to prove that he has lost sales of his invention on account of the infringement. In order for the plaintiff to rely upon this rule,
345 he must first prove that he lost sales on account of the infringement, and in addition to such proof, he must also prove how much he has lost in money on account of the loss of such sales'

"This instruction, which covers an elementary rule of patent law, that lost sales, while an element of damages, must be proven, ought to have been given.

"Walker on Patents, section 563.

"Seymour *vs.* McCormick, 16 How., 490.

"Dobson *vs.* Dornan, 118 U. S., 18.

"The 48th error assigned by the defendant is the failure of the court to give the following requested instruction:

"'Another rule for assessing damages is for the plaintiff to prove that he had an established royalty, for which he sold to others the right to use his invention, and which others paid to him for such right. In this case the plaintiff has not proved any established royalty for the use of his invention, and the jury must not assess damages upon the basis of a royalty for the use of the invention.'

"This instruction should have been given. The testimony of the plaintiff affirmatively shows that he had no established royalty covering his alleged invention. Such being the case, the jury should have been instructed that they should not assess damages against the defendant upon the basis of a royalty.

"Walker on Patents, section 555, says:

"'There are several methods of assessing damages for infringe-

ments of patents. One of those methods consists in using the plaintiff's established royalty as the measure of those dam-
346 ages.' That royalty must be uniform, and be actually paid or secured before infringement committed, before it can be relied on as a basis for the estimation of damages against an infringer.

"Rude *vs.* Wescott, 130 U. S., 165.

"The 49th and 50th assignments relate to the proof necessary to be introduced by the plaintiff before he can recover more than nominal damages.

"There must be some data upon which to rest a basis for the estimation either of profits or damages; if the plaintiff is unable to prove how much money he has lost, or if he fails to show that the defendant made a profit, then of course he cannot recover more than nominal damages. As said by the Supreme Court in New York *vs.* Ransome, 23 Howard, 487, 488:

"'Actual damages must be calculated, not imagined, and an arithmetical calculation cannot be made without certain data on which to make it.'

"In connection with the question of damages, we submit that the court erred in overruling the motion of defendant to strike out the testimony of witness A. C. Brown (assignment of error 6, Record, p. 96), and in overruling defendant's objection to the question as to value asked the witness G. M. Glover (specification of error 9, Record, p. 101). Mr. Brown testified (Record, pp. 95–97) that the value of the Brill device on a sewing machine was five dollars. Mr. Glover testified that its value was between three and five dollars. In each instance the testimony was given without any proof of information within the knowledge of the witness upon which he could base a
347 competent opinion. In each instance the opinion was speculative—the mere guess of the witness. The testimony could have had no other purpose nor bearing than to affect the question of damages in the minds of the jury, and was calculated to prejudice the jury upon that question. The evidence was guess-work, and it was logically followed by guess-work in the verdict. Speculative opinions are not competent to prove damages. The necessary data for their computation must be shown.

"3 Robinson, 1071 and notes."

Judging from the recent decision in the Jensen case as well as from other recent decisions here, and from remarks that have been made by United States judges here, we conclude that the new judges struck at the outset that ancient "chestnut" pronounced by the Supreme Court in the case of McCormick *vs.* Talcott, 20 Howard, page 405, and to have given the expression undue prominence as a rule of law; so much so indeed as to override nearly if not quite all of the actual adjudications upon the issues presented that have been of late years made by the Supreme Court. The "chestnut" alluded to is in the following language:

"If he be the original inventor of the device or machine called

the divider, he will have a right to treat as infringers all who make dividers operating on the same principle, and performing the same functions by analogous means or equivalent combinations, even though the infringing machine may be an improvement of the original and patentable as such."

The court of appeals quote this expression from the McCor-
348 mick *vs.* Talcott case, and apply it to the Jensen case, 29 Fed. Rep., page 863. This is done by the court of appeals in utter disregard of the difference between the character of the McCormick patent on the divider and the complainant's patent on the canheader.

In the McCormick case the divider was treated as a machine by itself, although it was a part of the reaper to which it was attached. It is true that the claim was for a combination of elements. But a close reading of the description discloses the fact that the combination claimed made the entire divider. The claim was for the combination of the bow L and the dividing iron M. Now these two elements made the entire machine called the divider. A piece, E, extended forward from the reaping machine, and acted as a support for the divider, which consisted of the two pieces L and M. The two pieces when joined made the divider, and as a divider the combination was marked K in the patent. The combination was therefore very fairly referred to by the Supreme Court as a "machine," and the patent construed the same as though the claim had been for "the divider K, composed of the two pieces L and M." The Supreme Court certainly called the divider a "machine," and it certainly was made up of the two parts L and M, and those two parts did constitute the entire divider that was called K.

Looking at the decision in this light and the puzzle ceases to be a puzzle. The patent was for the machine as an entire machine. The court says: "If he be the original inventor of the device or machine called the divider," etc.; this is in effect the same as though the reading had been: "If he be the original inventor of the device K, which is made by combining together the two
349 parts L and M, he will have a right to treat as infringers all who make dividers operating on the same principle, by similar means or other equivalent combinations which will make a like divider."

Now "analogous" means similar or like. Webster gives the definition of "analogous" as

"Having analogy; corresponding to something else; bearing some resemblance or proportion—followed by to."

Under this definition Webster gives as synonyms of the word analogous, "Corresponding; similar; like."

Also the same author gives the definition of "like" in the second subdivision of the definition as "nearly equal; having resemblance; similar; resembling—often with to."

The same author gives the definition of "similar" under the second subdivision of the definition as "somewhat like; nearly corresponding; resembling in many respects."

The use of the word analogous is largely explained in its appli-

cation to patent law in Curtis on Patents, from section 55 to section 69. In Curtis the word analogous is used to distinguish between those cases in which the use of an old thing would be an invention and those cases in which it would not. If the new use was applied to subjects that were analogous to (that is like) the old subjects to which the same thing had been applied, then there would be no invention, but if the application was made to subject-matters that were not so analogous to the old subject-matters, then there would be invention and the patents would be sustained. The meaning of the word analogous as used by Curtis agrees we think with the definition of it as given by Webster.

350 When then the Supreme Court say in McCormick *vs.* Talcott, the patentee will have a right to treat as infringers all who make dividers operating on the same principle, and performing the same functions as the patent divider performed and when they are so made to operate on the same principle and perform the same functions by the use of "analogous means" or "equivalent combinations," it is no more than saying that he may so treat as infringers all those who make dividers which are made to operate upon the same principle and to perform the same functions of the patented divider by the use of like means or equivalent combinations.

It is to be observed that the infringing dividers under the rule here declared must do both of the two things mentioned. It must operate upon the same principle, and it must perform the same functions, and not only these, but it must be made to operate upon that same principle by the use of like means or equivalent combinations, and it must also be made to perform the same functions by like means or by similar combinations. Walker on Patents says that "equivalent combinations in the McCormick case doubtless signifies the same as combinations of equivalents." See section 360.

As the courts here have been applying the language of this McCormick case, it seems to have been enough that the machine performed the same kind of work without regard to whether it operated upon the same principle or not, or whether it was made to do its work by like means or not. The courts here, so far as we can understand the decisions, have seemed to assume that if one

351 machine did the same kind of work as another that then it must be that it operated on the same principle and that the means that made it operate must have been the equivalents of the means described in the patent. In doing this the later decisions of the Supreme and other United States courts have been practically ignored, or if not ignored their application to the cases on trial was not made in such a way as to give them any effect. Take for instance the Jensen case to show an example of what I am saying. In this Jensen case the court of appeals says, near the end of the decision, 49 Fed. Rep., page 875:

"It would be a perversion of the law to hold a machine which can do certain kinds of work to be an infringement of a patent for a different machine which cannot do the same work."

On page 869 the court cites Wicke *vs.* Ostrum, 103 U. S., 469, as

an authority. The patent in the Wicke *vs.* Ostrum case was on a nail-driving machine, which was a pioneer patent, the machine being the first machine ever made that would drive nails. The Wicke machine drove nails in a vertical position while the defendant's machine drove the nails in a horizontal position. The Supreme Court held that the work of driving nails in a horizontal position was not the same work as driving nails in a vertical position. On page 470 in the Wicke and Ostrum case the Supreme Court says in referring to the defendant's machine: "His machine will not do the work of Wicke's, that is to say, drive a nail vertically, nor will Wicke's do that of his, and drive horizontally.

The truth is, the two machines are entirely unlike, and while
352 they both drive more nails than one at the same time they do it in different ways."

Now it is evident if driving nails horizontally is not the same work as driving them vertically that the heading of cans horizontally is not the same work as heading them vertically. In the Jensen case it was an undisputed fact that the Norton machine would not head cans vertically but would head them horizontally, and that the Jensen machine would head cans vertically but would not head them horizontally. If the court of appeals had accepted the rule of the Supreme Court that machines which would not do vertical work did not do the same work as machines which would not do horizontal work, it must have decided that the Jensen machine was no infringement of the Norton patent under its own rule, that "It would be a perversion of the law to hold a machine which can do certain kinds of work to be an infringement of a patent for a different machine, which cannot do the same work."

Even without referring to the Wicke and Ostrum case at all it is easy to see that the court of appeals made the very "perversion of law" which it mentions, since in that case it was also an undisputed fact that the Jensen machine was a machine that was invented for the purpose of heading filled fish cans, which must be, and were headed by that machine in a vertical position, while it was also an undisputed fact that the Norton patented machine could not be made to do that kind of work at all, for the reason that it could not head cans in a vertical position.

353 This fact was evidently called to the attention of the court, for on pages 862 and 863 of 49 Fed. Rep. (the Jensen and Norton case), the court says:

"Appellants contend that Jensen's invention was brought about by the necessities of the salmon-canning industry; that his machine is specifically adapted to putting the final heads on cans filled with fish or other substance; that it is the only machine for heading cans that can practically be used for this purpose; that the Norton machines cannot be successfully used to accomplish this result; that the Jensen machine carries the can and heads in a vertical position; that its claim to superiority over all other heading machines is the peculiarity of its construction; so as to head hand-made cans, which are used almost exclusively in the salmon-canning business; that appellees have not been injured by the Jensen

machine, because it has simply met a want that the Norton machine did not and could not supply." Indirectly the Jensen machine may have caused loss to Norton for the reason that the users of fish cans may have been more apt to purchase Norton's fish cans if they could not use the Jensen machine than they would be if they could use the Jensen machine. Some of the users made their own cans and some bought of Norton's licensees and other parties. But with this possible exception to what the court in the foregoing quotation says was the appellant's contention, such contention was strictly true, nor does the court anywhere say that it was not true. The court does not meet the contention, but overrides it, although in so overriding it the court perpetrates that very perversion of law which itself defines by holding that the Jensen machine, which
354 does work that the Norton machine could not be made to do, was still an infringement of the Norton patent, which merely covered subcombinations of devices that were contained in such incapable machine.

I understand that the court claims that it does follow the decisions of the Supreme Court in making the decisions which it has made, but this claim cannot possibly be corrrect. Taking one general statement from out of the mass of Supreme Court decisions and applying that general statement to any and all cases, and giving it an extreme meaning which the Supreme Court never intended, and by so doing overriding so many other decisions of the Supreme Court which must be overridden in order to reach the conclusions which the courts have been reaching in deciding what are infringements of patents, is not following the decisions of the Supreme Court. It is taking some of the statements from some of those decisions and distorting them so as to give them an unnatural significance, and then turning loose upon the manufacturing interests of this coast such distorted creations to crush out the life and vitality of the Pacific coast industries. In this very Jensen case which I have cited with so much particularity in order that I cannot be accused of making any misrepresentations in regard to it, Jensen was ruined for no other reason than that he invented a machine that no other person had ever invented, and one that reflected credit and honor upon this Western coast, an invention and machine that created an industry needed to manufacture it, and the business of his company organized to carry on the manufacture of his new invention was crushed out of
355 existence and destroyed, and the salmon-canning industry was deprived of any and all machines for heading filled fish cans, since Jensen's was the only machine ever made that could do that kind of work. All this was accomplished only by applying to that case what the court itself defines as a perversion of the law, and it was done at the behest of the Norton Brothers who had come to this coast and found here the Jensen machine, and who, until they found it here, had never dreamed of the possibility of such a machine being made, who had never invented the machine, nor any part of it, and except for the invention of it by the now-ruined Jensen it would not yet have been known.

Comparing the decisions of this court and the new court of ap-

peals with the decisions of the United States Supreme Court, made during the same time, and the contrast is easily seen. The Supreme Court has decided the great majority of patent cases that has come before it in favor of the defendants, while the courts here have decided most of such cases in the plaintiff's favor. This has not resulted from the fact that the cases in the Supreme Court showed less rights in the plaintiffs, but it resulted on account of the difference in the application of the rules of law. Take one of my own cases, that of Royer *vs.* Coupe & Burgess, as an illustration. This case was decided by the Supreme Court within the last two months. The patent was for a treatment of rawhides, by which the hide remained rawhide for all time. It was not leather. Royer worked for many years to find some method by which rawhide could be so prepared that it would remain in a soft pliable condition, be free from the devouring attacks of rats and vermin, and retain its great
356 natural strength, which is more than double that of any prior article that had ever been made from animal hides. While Royer was trying to accomplish this result the tanning fraternity pronounced it impossible. Royer finally found that by taking the dry unhaired rawhide and softening it by mechanical action alone, with a very little moistening with water, and stuffing into the hide while it was being softened by mechanical action a mixture of tar, tallow and rosin, that he succeeded. By his discovery he produced a new article of commerce, and created a new industry in its manufacture. Up to 1874 not an inch of that kind of an article had ever been made by any other person than himself. Until he discovered how to make it not a particle of it had ever been made. His treatment of rawhide was the only treatment that had ever succeeded in making the article. The invention was radical, and his patent was a pioneer patent. No other patent had ever been taken out for anything that belonged to that subject-matter. The machine that was used was new with Royer and his brother, and the treatment that succeeded in making the article was new with Royer, and the article that was produced was also new with Royer.

The patent called for the treatment of the prepared rawhide as described. The proof was that up to the time the hides were unhaired and dried hard there was nothing new, as hides were so unhaired and dried when they were to be made into other kinds of articles long before Royer's new article had been discovered. That the new treatment began with the treatment of the hide after it was unhaired and dried. In describing the treatment in the
357 specifications of his patent, Royer began by saying: "After the removal of the hair from the hide by means of sweating—a process familiar to every tanner—the hide is dried perfectly hard." The new treatment from that point was then described. The defendants unhaired their hides by lime, and then removed all traces of the lime from the hides by a "bating" process. It was proved that this was in effect the same as unhairing by sweating. It left the hide in the same condition. We also claimed that as the new treatment began after the hides were unhaired, that the claim of the patent, "the treatment of the prepared rawhide in the man-

ner and for the purposes set forth," should be given a liberal and fair interpretation, and should not be construed to include the unhairing process at all, especially since the word "prepared" in the claim must mean something.

In applying for the patent, the new article was called "leather," and the application was rejected, until it was finally explained that the treatment was not of leather, but it was of rawhide, when the proper amendments were made in the Patent Office and the patent was granted. The defendants' article was rawhide when finished, and their treatment was of rawhide and not of leather.

"The Supreme Court decided that there was no infringement. It held that the 'prepared rawhide' of the claim meant the finished article."

The case is reported in 62 Official Gazette, page 318. The court held that by the amendments made in the Patent Office, Royer had limited his claim, and that his treatment included the unhairing by sweating to the exclusion of the unhairing by liming, and
358 then removing every trace of the lime. It was not contended that there was any other difference between the treatment of the patent and the defendant's treatment, or that there was any material difference between the article produced by Royer's treatment and the defendant's treatment. There was not a word said in the Patent Office record about the difference between unhairing by sweating and the defendant's unhairing by any other method, nor did we ask to have the claim expanded beyond what the natural meaning of its words implied. The defendants were using the exact new treatment of the patent. Compare this decision of the Supreme Court, which was made on the 19th day of last December, with the decisions of the court here, and the contrast is clearly seen. The effect of such difference in the decisions has already struck down more than one branch of manufacturing industry here. This decision of the Supreme Court in the Royer case is not exceptional with that court. Its recorded decisions for years, with here and there an exception at very long distances apart, show that, as a general rule, each one of its decisions was the funeral occasion of some patent. On pages 32, 33 and 34 of our supplemental brief in the Jensen case, we cited a list of over forty cases in which the Supreme Court held the patents to be invalid. How long do we suppose the Jensen decision would last if it could be brought before the Supreme Court, taking the decision in the Royer case mentioned, or the Wicke and Ostrum case, or in fact almost any case in which the question of infringement has been passed upon by the Supreme Court during the four years last past as a criterion by which to judge?

359 Going back to the case of McCormick *vs.* Talcott, we think the language there used is easily explained by the fact before suggested, that the claim, although in the form of a combination claim, really covered the divider as an entire machine, for the reason that the two elements named in the combination constituted the entire machine, and by the fact that the Supreme Court called

it a machine. The court paid no attention to the form of the claim, but considered it a machine and called it a machine.

In cases where a patent for a machine, instead of being for sub-combinations that are found in a machine, the law of mechanical equivalents applies in a different way. If the claim covers an entire machine an infringement takes place when another machine is made which embodies the plan and mode of operation, or principle of the machine, without regard to whether it has the same number of corresponding parts or not. In such cases the language of the court in McCormick *vs.* Talcott applies in all its force.

See Waterbury Brass Company *vs.* Miller, 5 Fisher's Patent Cases, pages 68 and 69. The claim is on page 54. It is for mechanism not definitely described in combination with other mechanism, which is not definitely described otherwise than by a reference to the specifications of the patent. The patent was held to be a patent for the machine practically.

Curtis on Patents discusses this question very fully from sections 308 to 312. These sections relate to patents for machines, as contra-distinguished from patents for combinations. Curtis dis-
360 cusses the infringement of combinations, under section 332, and he there repeats the familiar rule that "where a patent is for the combination alone, it is no infringement to use any of the parts or things which go to make up the combination, provided the combination itself be not used." Curtis discusses many English cases, and they must not be confounded with American cases, or more difficulties may arise, as the decisions of the two countries are not always precisely the same.

Under the head of machine infringements cited, Curtis describes the McCormick *vs.* Talcott case, just as though that was a patent on the machine, and not a patent for a combination.

Referring the court to the references mentioned, and particularly those in Curtis, I will leave this part of the subject. My object in following out the language of McCormick *vs.* Talcott to such length is to try and clear up any doubt as to the idea that that case conflicts with the well-understood rules of law in reference to combination claims. The patent law (section 4886 of the Revised Statutes) allows a patent to be granted for a machine, and also for an improvement of a machine. Improvements of machines are usually covered by claims for specific combinations of mechanical devices. By keeping in view the decisions which have been made upon patents for machines, or for improvements in machines in which specific combinations were not claimed, and those decisions which are upon specific combinations alone, we think all trouble will disappear. Many claims are of a mixed nature, as where combinations are claimed of some one specific device with "mechanism"
361 for operating such device. In such case, of course, the specific device or its mechanical equivalent must be found in the defendant's machine, while the "mechanism" that operates it may be the same as that described in the patent, or it may be an equivalent of that mechanism as a whole, and as such equivalent of the mechanism as a whole, it would not be necessary to find in it

the same corresponding parts as are in the mechanism of the patent.

The patent in the case of Blake *vs.* Robertson, 94 U. S., 728, had claims which were of this mixed nature. The patent was for a stone-breaker. Its first claim was:

"A combination of a stone-breaking machine of upright converging jaws with a revolving shaft and mechanism imparting a definite reciprocating movement to one of the jaws from the revolving shaft, the whole being and operating as set forth."

In this claim there were defined, as definite devices, the upright converging jaws and the revolving shaft. The defendant's machine had these exact devices. The third element of the claim was "mechanism." The mechanism consisted of a system of compound leverage made of metal. The defendant substituted for this mechanism, that was made up of levers, etc., a hydraulic apparatus. As an entire mechanism the defendant's mechanism was a substitute for the patented mechanism that connected the revolving shaft with the jaws, but when we look at the plaintiff's mechanism and see the number and character of the devices used in it and under-
362 take to find the corresponding devices in the defendant's hydraulic mechanism we fail to find them. If we consider that mechanism to be an entire machine then the rule as stated in the McCormick case applies.

And so in the case of Machine Co. *vs.* Lancaster, cited by the court of appeals in the Jensen decision. In that case the claims were for combinations, but each element of the combination was itself a complicated "mechanism." The first claim may be used to illustrate all of them. It is as follows (129 U. S., page 266):

"The combination in a machine for sewing shank buttons to fabrics, of button-feeding mechanism, appliances for passing a thread through the eye of the buttons and locking the loop to the fabric, and feeding mechanism, substantially as set forth."

Now in this claim there is no specific device named. In it no one device constitutes an element of the combination. Each element of the combination is itself a mechanism. The court found a corresponding element in the defendant's machine for each one of the elements of the combination. There were held to be three elements or "groups of instrumentalities" (see page 270) in both machines. It was a pioneer invention and the court allowed the doctrine of equivalents to apply. For each one of the instrumentalities that constituted an element of the claim of the Morley patent the court found a corresponding instrumentality in the defendant's machine, and each one of these corresponding instrumentalities in the defendant's machine operated in the same way, and produced the same result, and did the same work as did its corresponding instrumentality which constituted an element of the patented combination in the plaintiff's patent. Of course if either element of the
363 combination had been a single specific device then a corresponding device, operating in the same way and producing the same result, and doing the same work, would have to be found in the defendant's machine in order to have found any infringe-

ment therein. We do not assert that even in such case the defendants might not infringe by using two or more devices to do the work of the single device that constituted an element of the patented combination. We do, however, assert most positively that if the defendant's machine would do the same work by leaving out one of the devices and not substituting any equivalent in its place that constituted one of the elements of the combination, that then there could be no infringement of that combination.

The court will readily see from all these authorities that in determining whether a combination is infringed or not it must first be ascertained of what the elements of that combination consist. If either element is a single device then a corresponding element must be found in the defendant's machine, either in a single element, or in several devices which together do the work of that single element, and do that work by operating in the same way, so as to constitute a substitute for that element. If either element of the patented combination is itself a mechanism consisting of several devices, then a corresponding mechanism performing the same work of that element and operating in the same way must be found in the defendant's machine or there can be no infringement. In every case there is a definite beginning and ending of the work which each element of a combination does, and to find an equivalent
364 of that element in a defendant's machine, whether that element be a single device or a mechanism, there must be found a corresponding element consisting of one or more devices which perform that same work, beginning at the same point of performance and finishing that same work where the original element finished it. This the equivalent must do. Although an equivalent may do a great deal more than the original device did, for which it is substituted, it is not excused from doing what that original device did, or from doing it in the same way.

When a machine is so constructed that it does not contain the corresponding parts of a patented subcombination either by the same or by substituted devices, it is a burlesque upon the law to hold that such machine infringes the combination, and it makes no difference in this regard whether the entire machine does, or does not do, the same work which the machine did that contained the subcombination patented. In this I speak of subcombinations contained in a machine, and not of a combination which makes up the entire machine.

We hope and we believe that we have presented these points correctly and clearly so that the court fully understands us. Of course we do not undertake to know everything in patent law, and we are liable to be mistaken the same as others, but we have given our own belief faithfully herein, and submit it to the court for its consideration without regard to what effect our showing may have upon this particular case. We are about as apt to have cases on the side of the patent as we are to have cases upon the defendant's side, and we are anxious that correct rules of decision shall be here
365 established in patent cases that will be intelligent and therefore permanent, so that counsel may be able to advise clients

how to act with a reasonable certainty that, if correct counsel is given, the clients will be protected by the courts in following such counsel.

We have not herein so far attempted to define those cases in which a narrow construction is given to improvement patents. The only result that follows from giving a broad construction to combination claims is that the patentee may invoke and apply the doctrine of mechanical equivalents.

We will show later that the claim should receive a narrow construction as we contended in our original brief. Suppose the rule of equivalents does apply to this case, it becomes important to find out what a mechanical equivalent is. The mechanical equivalent of a device in a combination must do the same work that the original device in that combination does.

Walker on Patents, section 352, says:

"One thing to be the equivalent of another must perform the same functions as that other."

In Clough *vs.* Manufacturing Co., 106 U. S., page 178, the Supreme Court says:

"But Clough was the first person who applied a valve regulation of any kind to the combination to which he applied it, and the first person who made such combination, and he is entitled, under decisions heretofore made by this court, to hold as infringements all valve regulations, applied to such a combination which perform the same office in substantially the same way as, and were known equivalents for, his form of valve regulation."

366 In Morley Machine Co. *vs.* Lancaster, 129 U. S., the claim was a combination of three sets of mechanism, each set performing a particular function and performing a certain duty. On pages 283 and 284 the Supreme Court says in that case:

"Applying these views to the case in hand, Morley having been the first inventor of an automatic button-sewing machine, by uniting in one organization mechanism for feeding buttons from a mass and delivering them one by one to sewing mechanism and to the fabric to which they are to be secured, and sewing mechanism for passing a thread through the eye of the button and securing it to the fabric, and feeding mechanism for moving the fabric the required distance to space the buttons, another machine is an infringement, in which such three sets of mechanism are combined, providing each mechanism, individually considered, is a proper equivalent for the corresponding mechanism in the Morley patent; and it makes no difference that, in the infringing machine, the button-feeding mechanism is more simple, and the sewing mechanism and the mechanism for feeding the fabric are different in mechanical construction, so long as they perform each the same function as the corresponding mechanism in the Morley machine, in substantially the same way, and are combined to produce the same result."

See also pages 35, 36, 37 and 38 of our original brief upon this subject.

If the court will notice the difference which is made by the authorities between claims that cover an entire machine and combina-

tions which make up an entire machine, and those other
367 claims which cover subcombinations of devices, and which are the sort of claims found in the plaintiff's patent, we think that it would not be at a loss to apply rules of patent law other than the one which it has in its past decisions made so very prominent, to the exclusion of others which, in our humble judgment, were much more applicable. For instance, in this particular case, the claims of the patent are for subcombinations, which are claimed to be improvements upon existing mechanisms only. Neither claim covers, or purports to cover, any entire machine. In our bill of exceptions we complain because of the fact the court below refused to give the instructions which we asked for upon the subject of combinations. See assignments of errors, numbers 41, 42, 43, 57, 61, 62, and others.

Yet, although so many of our exceptions apply to the construction of claims that are for combinations only, and although so much of our original brief was taken up in arguing these questions—from pages 25 to 40—yet very little is said in the decision of this court upon the subject of combinations, but instead thereof it repeats in effect the one rule of law that applies to entire machines and not to subcombinations. In its decision the court says:

"The jury must have found that by substituting one screw or an adjustable slide or lug for the two adjustable screws of the plaintiff's patent, the defendant accomplished all the results of that feature of plaintiff's combination by an equivalent device, and that the deflection of the defendant's axle to form the crank, is but a change in
form from the plaintiff's arm 'E' which is attached to the
368 side of the wheel, and that the defendant's brace brings the point of support of the wheel to the same relative position it would occupy if the plaintiff's bracket were used. There was evidence before the jury to sustain this view. There was testimony to the effect that all of the devices employed by the defendant were the same as plaintiff's devices, with the exception of slight changes in form, which performed no new functions, and which accomplished all the results attained by the plaintiff, with no improvement in operation and no perceptible advantage in construction or cost, and that it was wholly immaterial whether there were two adjustable screws or an adjustable lug, whether the treadle were attached to an arm affixed to the wheel out of its center or to an axle passing through the center and deflected away therefrom to form the treadle crank, or whether the support were a brace or a bracket.

"In short, the jury must have found that the improvement or invention of plaintiff, if any there was, consisted in its essential features, in combining the advantage of adjustable screws, whereby friction and noise were lessened, and opportunity was afforded to adjust and take up lost motion, together with an axle so shortened as to leave only length for support upon both sides of the wheel, and room between for the central and even operation of the treadle crank, and that these are likewise the essential features of the defendant's wheel."

Now, the foregoing does not hold that in order to infringe the first claim of the patent that there must be found in the defendant's machine every element of the combination of the claim. This rule of the patent law, we have never been able to convince this
369 court of appeals should be applied. Why this is the case we cannot understand. It is true that it may have repeated the rule formally in some instances, but we have not yet been able to get it applied. In the recent Norton-Jensen case this court used the expression that "bearing in mind that there can be no infringement of a combination claim unless every element, or a mechanical equivalent of an omitted element, is used," etc. Yet in that very case the court held combination claims to be infringed when the defendant's machine did not contain the elements of the combination or any mechanical equivalents of the omitted elements. Were it necessary, we would specify the particular claims to which we refer. In that case this court applied the other rule, and satisfied itself by saying:

"Norton being the original inventor, he, and those claiming under him, would have the right to treat as infringers all persons who make devices or machines operating on the same principle and performing the same functions by analogous means or equivalent combinations, even though the infringing machine may be an improvement of the original and patentable as such."

This rule the court applied to the combination claims of the patent. In fact the patent had nothing but claims for subcombinations of devices. None of the claims were for the machine as a whole, nor for combinations that made up the entire machine. Yet the court applied the rule which applies to patents for entire machines and which does not apply to claims for subcombinations.

Again we appeal to this court to apply the rule of law to com-
370 bination claims that belongs to them, and we ask it to do it now in this Brill case. The two adjusting screws are two elements of the combination of the first claim. They are both necessary elements for doing the adjusting which was one of the objects declared by the patentee of his invention. This court says that the jury must have found, among other things, "that it was wholly immaterial whether there were two adjustable screws," etc. The idea seems to be that if the same results were accomplished by leaving out one of the elements that the jury had the right to say that there still could be an infringement with that element omitted. We say that this is not the law. If a second party sees the patented combination, and if he can accomplish the same results by making the same kind of a machine that operates in exactly the same way and yet leave out one of the mechanical elements, not supplying its place with any mechanical equivalent, he may do so, and he will not infringe. Yet, according to the past decisions of this court, if we can understand them, such a man would be crushed out of existence. There are any number of patents obtained by simply adding a worthless element to mechanisms in existence, representing to the Patent Office that it is an improvement, and thereby obtaining a patent. The machine will not operate on any new

plan, or perform any new operation, or do any work that it would not do before. Yet the decisions of this court would give the patentee the principle or mode of the operation of the entire machines. Take the case at bar as an example. The prior patent showed the pointed screws and conical socket bearings. Their operation was the same when used in the old machines as when used in the Brill contrivance. In the old machines they increased
371 the ease of operating the machine. They diminished the noise. They provided a means of readily adjusting the bearings of the driving or fly wheels so that they might always run true and without shaking. See Brill's own testimony in the Record, pages 34, 37, 41 and 42.

Then by what right can Brill claim any share in these old results that were obtained by the very same means. Yet the court says the jury were justified in allowing them to Brill. We deny the proposition *in toto*. Old results accomplished by old means were the property of the public, and the defendant and every one else had a perfect right to use them; and when Mr. Brill used them in a slightly new construction, his whole invention consisted solely in that change of construction. That change of construction did not involve any new mode of operation. It did not develop any new results. It was a change in construction only without any change in results, in mode of operation, or in any feature whatever, except in very slight changes in the devices of the old combination. He put a bracket where others had used a standard for sustaining the inner end of the crank. This bracket the defendant did not use. Brill also divided the crank and its shaft into the projection D, and the arm E. This division of the crank and shaft the defendant did not use. The defendant did not accomplish any results that Brill had discovered, or developed, or in any way produced. The defendant used no results that are shown in the Brill patent except those that were as fully shown in the prior patents. Brill himself testifies that the difference between his apparatus and the old devices is a difference of construction only. Record, page 41.
372 Now, since the Brills alleged improvement consisted of a difference in construction only, to accomplish old results, and since the defendants do not use that construction, but accomplish the same old results without using Brill's construction, by what right could the jury say that the defendants should not accomplish those old results in spite of Mr. Brill, so long as it did not use anything of his contrivance? Brill himself used nothing but old devices or the equivalents of old devices. The defendant had the right to use those same old devices, and it also had the right to use other equivalents of those old devices which Brill had not invented. Because Brill had substituted equivalents of old devices this did not transfer to him the right to all equivalents of those old devices. He could not in this manner cover a field that belonged to the public. In this case the second branch of the rule declared in McCormick *vs.* Talcott, 20 Howard, on page 405, is applicable, viz:

"But if the invention claimed be itself but an improvement on a known machine by a mere change of form or combination of

parts, the patentee cannot treat another as an infringer who has improved the original machine by use of a different form or combination performing the same functions."

If there ever was a case in which the above rule applied, it is the present case; and we again urge upon the court the necessity of applying the right rules in the right places, and to apply to this case the law in regard to claims for combinations, and to take back the assumption that when the claim called for two adjusting
373 screws that the jury might find that an infringement might take place when only one was used, and no equivalent adjusting device whatever used in the place of the other adjusting screw, and to correct the error contained in the instruction that was given to the jury, shown under our fifty-seventh assignment of error. Record, page 246. This instruction is to the effect that if the defendant used devices that accomplished the purposes of the patented invention, then the fact that the defendant used only one screw without any adjusting device at the other end of the crank would be immaterial, and there would still be an infringement. This instruction is in the teeth of the law upon combination claims. While the instruction speaks of equivalent devices, it does not speak of any equivalent adjusting device for the adjusting screw that is left out, nor does it make any allowance for the admitted fact that the "purposes of the patented invention" were old purposes that had been long in common use, and were reached by the identical means that Brill used for reaching them, excepting only the slight differences in the construction of parts.

But there is one other ground upon which we think this petition should be granted that seems to us impregnable. That is, that there is nothing in the record that even tends to show that the jury ever decided that the first claim of the patent was infringed by the defendant. We all know as a fact that the two adjusting screws were both mechanical elements of the combination covered by the first claim. We know that the defendants did not use one of those adjusting screws, nor did it use any mechanical equivalent
374 of it. It used no adjusting device in its place, or to do its work. This was admittedly so. Record, pages 43, 118, 119, 153, 154, 178.

The two exhibits, 5 and 3, show what the defendants used that are claimed as infringements. One has a sliding lug on one side for taking up lost motion, and the other has a screw at one end for the same purpose. In both, the device for taking up lost motion is on one side of the wheel only, and in neither is there any adjustable device at both sides of the wheel. There being no adjusting device at one side of the wheel there can be no adjusting of the wheel at all. Taking up lost motion is not adjusting the wheel.

When this court concludes that the jury decided that the first claim of the patent was infringed, it decided without any basis on which to rest any such conclusion. The case went to the jury to find upon the infringement of each of the claims. There might have been an infringement of the second claim without any infringement of the first claim, and the jury may have so found, or

the jury may have found that there was an infringement of both claims, and have assessed the damages upon both claims. Since the court has concluded that the second claim cannot be sustained, there should be a reversal of the judgment, in order that the case may be tried upon the first claim alone. If this court cannot decide that the first claim is invalid, because this is a suit at law, it as certainly cannot decide that it is valid. This question the jury must decide, and it can only decide it by having a new trial.

375 The case of Russell *vs.* Place, 94 U. S., 606, is conclusive upon the proposition that a general verdict upon two claims of the patent is not evidence that shows whether the jury decided upon one claim, or upon the other, or upon both. Upon page 609 the Supreme Court says:

"A recovery for an infringement of one claim of the patent is not of itself conclusive of an infringement of the other claim, and there was no extrinsic evidence offered to remove the uncertainty upon the record, it is left to conjecture what was in fact litigated and determined. The verdict may have been for an infringement of the first claim; it may have been for an infringement of the second; it may have been for an infringement of both. The validity of the patent was not necessarily involved, except with respect to the claim which was the basis of the recovery. A patent may be valid as to a single claim and not valid as to the others. The record wants, therefore, that certainty which is essential to its operation as an estoppel, and does not conclude the defendants from contesting the infringement or validity of the patent in this suit."

There is the same uncertainty as to what the jury decided by its verdict in the case at bar. It may have decided that the second claim of the patent was infringed, and the first claim was not. There is little probability that it decided that either claim was invalid, and very little probability that it decided that the large amount of damages was awarded upon the difference in construction between the older devices and the limited change in construction that was made by Mr. Brill.

376 We ask that the rehearing be granted herein, and we urge as the basis therefor each and every one of the exceptions which we took upon the trial of the cause as shown in our bill of exceptions contained in the record on this appeal. We ask it upon the additional ground that as this court has found that the second claim of the patent was invalid that there has been no adjudication upon the first claim of the patent by itself, and that as this court has found that the second claim of the patent is invalid that an adjudication of the first claim is necessary upon every point covered by the defense in regard to it, viz: upon the issue of its validity, its infringement, and the amount of damages that should be awarded for its infringement, if a jury shall find that it is valid or that it has been infringed.

We make our original brief filed on the hearing of this case in this court a part of this petition and request that it be considered accordingly.

Providing this honorable court shall feel impelled and see fit to

deny this, plaintiff in error's petition for rehearing, plaintiff in error most respectfully suggests and urges that the facts disclosed by the record made here, and the questions here raised and thereby presented, and the propositions of law involved, are of such gravity and importance, either singly or collectively, that such questions or propositions of law may and should be certified to the Supreme Court of the United States for instruction, final disposition and determination, and so certified in the interest of uniformity of decision, under section 6 of the act of Congress of March 3, 1891,
377 establishing this honorable court; and plaintiff in error so respectfully petitions.

M. A. WHEATON,
I. M. KALLOCH,
F. J. KIERCE,
CHARLES K. OFFIELD,
F. M. HUSTED,
Counsel for Plaintiff in Error, Petitioner Herein.

We, the undersigned, hereby certify that we are counsel for the plaintiff in error in the foregoing-entitled cause, and that we have prepared the foregoing petition for a rehearing therein. We further certify that in our opinion and judgment the said petition is well founded in law and is proper to be filed in the said cause.

M. A. WHEATON,
I. M. KALLOCH,
F. J. KIERCE,
CHARLES K. OFFIELD,
F. M. HUSTED,
Counsel for said Plaintiff in Error.

Endorsed on cover: Case No. 15,339. U. S. circuit court of appeals, 9th circuit. Term No., 955. The Singer Manufacturing Company, plaintiff in error, *vs.* A. Brill. Petition for writ of certiorari and exhibits. Filed June 26, 1893.

IN THE

Supreme Court of the United States.

OCTOBER TERM, A. D. 1893.

No. 955.

THE SINGER MANUFACTURING COMPANY,
Plaintiff in Error,
vs.
ANDREW BRILL,
Defendant in Error.

Petition for Writ of Certiorari to the United States Circuit Court of Appeals for the Ninth Circuit.

BRIEF AND ARGUMENT FOR PLAINTIFF IN ERROR

BY

C. K. OFFIELD
and
M. A. WHEATON.

MAY IT PLEASE THE COURT:

This petition for writ of *certiorari* to the United States Circuit Court of Appeals for the Ninth circuit, is founded upon and asked by reason of the following facts and conditions:

SYNOPSIS OF FACTS ANTECEDENT TO THE PETITION.

Upon the 14th day of May, 1891, the Error Defendant, Brill, a citizen of the State of California, brought an action at law against the plaintiff in error, a New Jersey corporation, in the United States Circuit court for the Northern district of California, for an alleged infringe-

ment of certain Letters Patent granted the Error Defendant, dated July 2, 1872, and numbered 128,460, for an alleged improvement in sewing machines.

Upon July 21, 1891, the plea of general issue was filed to said action, and notice of special matter of defenses given and filed as provided for by the statute in such cases. (Rec., 14.) Upon the days of October 21 to 31 inclusive, 1891, a trial of such action was had before a jury, with the resulting verdict in favor of the Defendant in Error, and an assessment of damages against Plaintiff in Error at the sum of $10,008.30, and judgment entered thereon in favor of Defendant in Error in accordance with said verdict. (Rec., 16.) Upon the 28th day of March, 1892, the Plaintiff in Error filed a transcript of record, and petitioned for a writ of error thereon to the United States Circuit Court of Appeals, for the Ninth circuit, in this case, such writ being allowed. (Rec., 246.) The assignment of errors upon which said writ of appeal was asked and allowed, appearing in this record, page 247 to 264, inclusive.

Argument upon said writ was duly had, and the brief filed in support of the same by Plaintiff in Error, appearing in this record, pages 275 to 323, inclusive.

Upon the 30th day of January, 1893, the judgment of said Circuit was affirmed and the cause remanded etc., by said Circuit Court of Appeals for the Ninth circuit, upon opinion filed thereon, as appears in this record upon pages 269 to 274, inclusive, and thereon and thereafter the mandate in said court was stayed for a period of sixty days for the petition for rehearing of said cause in behalf of said Plaintiff in Error; such petition being filed March 2, 1893, appearing in this record, pages 323 to 350. Upon the 1st day of May, 1893, said petition for rehearing was

refused and the issuance of the mandate given, stayed for a period of time now running; to permit Plaintiff in Error to file his above petition for writ of *certiorari* in this honorable court.

It appears in and by this petition for rehearing, and as a part thereof, that the United States Circuit Court of Appeals for the Northern district of California was asked to certify the questions of law involved to this Honorable Court for inspection, final disposition and determination, and denied the same. (Rec., 350.) Upon the 22d day of June, 1893, the petition of the Plaintiff in Error for writ of *certiorari* was filed in this court, together with the entire record and exhibits, paper and model, of the Court below, such petition appearing upon pages 1 to 8 of this record.

Jurisdiction of this Honorable Court.

There can be no contention that were this case present in this Court prior to March 3, 1891, this Court would have full and complete jurisdiction thereof for final adjudication and determination. We take it that it is still, even under the Act of March 3, 1891, entirely at the option and volition of this Court to take jurisdiction of this case and decide the same with the same resulting effect and force as existed prior to that act. Or, stated otherwise, the hearing and disposition of such case and the right by the Plaintiff in Error to have such case heard and disposed of by this Honorable Court, was absolute prior to the Act of March 3, 1891, but that since the said Act, it is optional and discretionary with this Honorable Court to assume the jurisdiction, and so determine and decide.

We are, of course, well aware, that this Act was passed

for the purpose of relieving this Court from the enforced hearing and consideration of a great line and mass of causes that in late years have encumbered its docket and consumed its time; in which, upon even casual sifting and analysis, it was apparent that such causes were without just merit upon one side or the other, and that the time of this high tribunal, its energy and its patience, were thus wasted and imposed upon, and this to the great detriment of all important questions and interests constantly before the Court for judicial settlement and determination. The crowded condition of the docket and the vast number of cases appealed being a continued invitation and incentive to reckless and unconscionable litigants to abuse the privileges of the Court and harass just claimants by reason of these long delays.

We do beg of this Court, however, to remember that *it is the only tribunal of the whole people;* that since the foundation of the government, it has been considered as truly, more than all else, the palladium of the rights of the people, even as against all judges and juries; that it is a Court entirely without sectionalism; that it is high above all whispers or clamor and that the decisions and judgments of this great Court to the people of the whole land, has been the law; that indeed, this Court is the dominant vitality of the government itself.

The short lived existence of this Act of March 3d, 1891, as yet has made it impossible to determine with certainty beforehand the cases and questions both as to character and magnitude that this court will voluntarily assume jurisdiction, and pass upon, under the Act. We think we are aware of the decisions already made by this Court pursuant or under such act, relating to *certiorari* petitions; but such opinions rather indicate and outline ques-

tions and interests and character of litigation, that this Court will not assume jurisdiction of, under such Act, rather than the marking out by any metes and bounds, rules the admission of such cases into this Court.

We take it, however, that no hard and fast lines have been drawn, or will be drawn, which will bar the consideration by earnest and honest litigants of their supposed rights in this court upon any questions commensurate in gravity or importance with the elevated plane of the Court itself, where it plainly appears that injustice has been done. This Court has, however, thrown a "search light" over, as yet this unexplored field, and there has appeared for the guidance of litigants and counsel as to this matter two rules of authority and determination as to these questions.

In the case of Lan. Ow. Beu, petitioner, 141 U. S., 583, it is decided and so stated that only questions of gravity and importance, can enter this court by way of this writ.

In the case of In Re Woods, 143 U. S., 145, this Court seems clearly to state that it will assume jurisdiction of cases in the interests of jurisprudence and to ensure uniformity and straight lines of decisions and judgments, in cases involving weighty and serious matters.

In behalf of the Plaintiff in Error, we most readily accept the standards of admission to this court thus defined, and believe that both as to the magnitude of the interests involved, and in the interests of uniformity of decision, this petition will be entertained and granted.

As to the magnitude of the issues involved in a monetary sense, both as to realities and possibilities, the judgment and future aggregations or repetitions thereof, is

vast and impressive. The judgment in this case for the counties comprising the Northern District of California, is in the sum of $10,008 30. No mean sum of money in itself. The petition for the writ shows that the Defendant in Error Brill contemplates and threatens the bringing of further actions in the different federal circuits of the United States, upon this same patent, and that a repetition of such judgment in such circuits would aggregate a sum more than half a million of dollars. (Rec., 6.) As to the urgency of granting this petition in the interests of a uniformity of a line of established decisions, we will discuss this question hereafter in presenting the several grounds of contention for the petition.

STATEMENT OF FACTS AND REASONS RELIED UPON BY PLAINTIFF IN ERROR FOR ASKING AND GRANTING SAID FILED PETITION FOR WRIT OF CERTIORARI.

First. That said Brill patent is invalid upon its face as not exhibiting patentable novelty in the organized mechanisms of its two claims.

Second. Said Brill patent is clearly invalid as to both of its claims by reason of the presence of the mechanisms and alleged inventions of such patent and claims in the old patent exhibits here present, upon a simple comparison therewtth.

Third. There is no legal evidence in this record upon which the judgment or any verdict or judgment for damages can be found or sustained against Plaintiff in Error.

Fourth. All alleged evidence in this record as to damages or profits suffered by the Defendant in Error, or accruing to the Plaintiff in Error, relates solely to Brill's

second claim, and such claim being clearly invalid, and so found by the Court of Appeals, this writ should be granted and the judgment reversed.

Fifth. That there is no evidence establishing or finding infringement of the Brill patent by the Plaintiff in Error of the first claim.

First Reason and Argument for the Petition, *i. e.*, that said Brill Patent is Invalid Upon its Face as not Exhibiting Patentable Novelty in the Organized Mechanism of its Two Claims.

The entire organization, construction, purpose and use of the Brill patent is at once apparent to any ordinary mechanic or intelligent layman, simply upon an inspection of the drawings of the patent, irrespective of any descriptive matter or claims, and it is earnestly contended that an inspection of such drawings or a study of the written specifications in nowise discloses or suggests any evidence of originality or novelty arising to the dignity of invention or exhibiting in anywise patentable subject-matter. It requires no more than a passing suggestion and a reference to the long line of decisions beginning in the earliest reported cases of this court and following each other in rapid and unbroken succession with constantly increasing numbers to the last Supreme court volume of issue, to establish the fact that the great mass of so-called patents and inventions that have passed in review before this Court have been at once declared invalid and worthless by reason of the absence of patentable novelty therefrom. This Court has also laid down the precedent and principle of law that a patent which the court can see from inspection represents nothing but

trivial, common and unimportant mechanism, may at once by the court be declared invalid upon its face. This principle of law and procedure finds its clearest statement in this court in the case of *Brown* v. *Piper*, 91 U. S., 37, where the court says:

"Courts will take notice of whatever is generally "known within the limits of their jurisdiction; and, if "the judge's memory is at fault, he may refresh it by "resorting to any means for that purpose which he may "deem safe and proper. * * * Examined by the "light of these considerations, we think this patent was "void on its face, and that the Court might have stopped "short at that instrument, and without looking beyond it "into the answers and testimony *sua sponte*, if the objec- "tion were not taken by counsel, well have adjudged in "favor of the defendant."

Recognition and enforcement of this doctrine can be found through the books in the various circuits, and has had frequent recognition in substance in this Court.

Slawson v. *Railroad Co.*, 107 U. S., 649.
Philips v. *Detroit*, 111 U. S., 606.
Reckendorfer v. *Faber*, 92 U. S., 347.

Examining this Brill patent and mechanism in the light of these facts and decisions, what do we find? Simply and only, that the Brill patent shows and describes a sewing machine band or fly-wheel ostensibly for treadle purposes, hung off center beneath the sewing-machine table, and supported as to its crank connection upon one side by the frame of the machine and upon the other by a suspended arm. The bearings of the crank connection to the wheel being merely the points of set-screws. The only statement of the object of the invention of Brill

that can be found in his patent is as follows: "The ob-"ject of my invention is to increase the ease of operat-"ing the machine, diminish the noise, and provide a "means of readily adjusting the bearings of the driving "or fly-wheel, so that it may always run true without "shaking."

This statement of invention means and can mean nothing more nor less, than that the supporting of the driving and belt-wheel of a sewing-machine upon the points of set-screws, reduces the friction and diminishes the noise in the operation of the wheel and contains necessarily the means of setting up the screw bearings when desiring to ensure these results. Only the most common form of devices for securing such results is exhibited by the Brill patent. We take it for granted that if neither the drawings nor the specifications of a patent, exhibit or disclose any devices containing patentable novelty, no claim recital can alter this fact nor add thereto.

What is there of invention or patentability in all this? The suspending of revolving wheels upon adjustable screw points for various purposes was old and well known by ordinary mechanics and laymen long before the date of the Brill patent, and old and well known for the precise purposes stated by Brill's patent, namely, to increase the ease of operating the machine by reducing the friction, diminish the noise and permit desired adjustability by the set-screw bearings. And of this fact this Court, we believe will take judicial notice; such constructions being known to the mechanical arts as "anti-rattling journals" and probably appear most frequently in lathe machines and machines of that class. No elaboration by discussion of this proposition can present the subject more clearly than a simple recital of the facts. Like the demon-

stration of the first proposition of Euclid that "that all "right angles are equal," the invalidity, on its face, of the Brill patent is made no clearer by discussion than it is by the statement, and visual inspection.

We advance the invalidity of this Brill patent apparent upon its face, as a ground for the granting of this petition, with all the more confidence for the reason that for more than a decade of years past, this court has had before it from all the circuits, a great array of cases, in which every mechanical industry in this country has been represented, every type of machine exhibited and almost every known mechanical form of construction discussed and presented to this court, with detailed explanations of the principles and operations thereof.

As we understand the decisions of this Court, it has been decided that mere aggregation, change in degree, duplication, enlargement, improvement in workmanship, omission of parts, substitution of equivalents, substitution of superior materials, the absence from new combinations of old devices having no new mode of operation, the absence of mere mechanical skill, do not constitute patentability or invention. At the hearing of this case with the Brill patent in evidence, the Court was requested to instruct the jury to find their verdict for the Plaintiff in Error, and such instruction was refused. (Rec., page 214, Exception No. 21.)

SECOND REASON AND ARGUMENT FOR THE PETITION, *i. e.:* SAID BRILL PATENT IS CLEARLY INVALID AS TO BOTH OF ITS CLAIMS BY REASON OF THE PRESENCE OF THE MECHANISMS AND ALLEGED INVENTIONS OF SUCH PATENT AND CLAIMS IN THE OLD PATENT EXHIBITS HERE PRESENT; UPON A SIMPLE COMPARISON THEREWITH.

We take it as a correct proposition of law, that where the old art as shown by Patent Office exhibits, clearly establishes the invalidity of a patent by reason of the presence of the alleged invention thereof in such old art, that it is clearly the duty of the court to instruct the jury as a matter of law, that such patent is invalid even if the invalidity of such patent is not apparent by reason of general knowledge upon its face. This Court has frequently held that the validity or invalidity of re-issued letters patent is a question of law to be determined by the court upon an inspection and comparison of such re-issued letters patent with the original thereof to fix whether or not upon such comparison the inventions are the same, and to instruct a jury accordingly, representative cases as to this proposition being quoted in the opinion of the court below, viz:

Heald v. *Rice*, 104 U. S., 754.
Torrent Arms Co. v. *Rogers*, 112 U. S., 659.
Fond du Lac v. *May*, 137 U. S., 395.

We respectfully contend that, with equal force, the question of the validity or invalidity of a patent is equally a matter of law, where it is perfectly plain that a comparison of the patent in suit with the old art, shows that ev-

erything of invention or device in the asserted patent was present in the old art, or so closely approximated thereto, as to leave no possible room for invention or patentability by reason of the slight changes apparent in the patented device.

The cases are of great number in the volumes of the reported decisions of this court, where the invalidity of letters patent have been found and decreed by your Honors, by the mere fact of comparison of the patent in suit with the old art, and so stated by this court, that such invalidity was at once apparent upon such comparison.

If we are correct in this our view of the law, then, indeed, do we respectfully insist that the Brill patent is clearly invalid upon a simple comparison with the old art in evidence in this case.

Take, for example, the early patent to Dayton & Mallory, dated April 27, 1832, for an improvement in gauge lathes. (Rec., 17.) This patent exhibits the flywheel of the Brill device supported upon adjustable bearings, with screw points passing into the ends of its crank journals, supplemented with the treadle attachment described, but not shown, in the Brill patent. The only possible object of the devices of Dayton & Mallory was to increase the ease of operating the machine by reducing the friction to a minimum, diminishthe noise, and provide set-screw adjustable bearings for the driving or flywheel exactly and precisely as provided for in the Brill patent.

It is true that the arm supporting the inner end of the crank journal of this Dayton & Mallory patent extends nearer to the base of the stand, but this is a mere accident or incident, and if you should cut away such arm or

support below the set-screw adjustable attachment supporting the crank journal, you would have the precise device of the Brill patent. Can there be the slightest doubt, as a proposition of law, that it was the duty of the court, upon such Dayton & Mallory patent appearing in this case as evidence, to instruct the jury that the Brill patent was invalid, by reason of the absence therefrom of invention or patentable novelty?

Again, take the patent to Presbrey of July 28, 1832, for a very simple machine for turning irregular forms, appearing in this record, page 45. This patent of fifty years ago exhibits the fly-wheel of the Brill construction supported under and in a frame by its crank shaft upon screw point-centres, and exhibited also the treadle attachment absent from the Brill patent. The double-treadle crank of Presbrey has the extension of the crank shaft to the opposite side of the machine, as it obviously takes much more power to drive the machines of Dayton & Mallory and of Presbrey than a sewing machine, but obviously, if no more power were required in these machines than for a sewing machine, the crank-shaft would have been shortened and supported upon a dependent arm between the standards of the machine.

Again, take the patent to Albert L. Dewey, No. 56,909, of August 7, 1866, upon a sewing machine. This patent represents the fly or drive-wheel of a sewing machine supported upon a crank-shaft with adjustable screws, clearly showing every object of utility or invention claimed by Brill in his patent.

Again, the patent to Reese, No. 124,160, dated February 27, 1872, for an Improvement in Anti-Rattling Journals for Sewing Machines, exhibits substantially the fly-wheel shown in the Brill, supported upon a short shaft

under and inside the frame of the machine upon a short fixed journal and so arranged that the bearings of the journal are upon conical faces and adjustible by a follower-nut upon the journal.

To use the language of the patentee, Reese, " which " can be brought closer together as their faces on the " bearing faces of the wheel wear away so as to secure " a solid and noiseless journal for the wheel even after an " extended use." (Rec., 64.) It is clear to us that these patents disclose every thought, idea and shade of invention of the Brill patent, and its resulting advantages, and we respectfully contend that in view of these old patents, it was clearly the duty of the court below to have declared this Brill patent invalid by reason of the absence therefrom of invention and patentable novelty, and have so instructed the jury to find, and by reason of the refusal so to do, as evidenced by exceptions Nos. 21 and 13, page 214; this petition for writ of *certiorari* should be granted and the judgment reversed.

For the more ready and convenient understanding of this whole matter of these old patents by the Court, and their clear anticipation of every thought or suggestion of Brill, we have associated with this brief and record, enlarged drawings or sketches of certain figures of these old patents, showing at once their identity with the Brill alleged inventions or devices; such drawings being marked respectively, Illustrative Drawings, Old Patents, Nos. 1, 2, 3, 4 and 5, and a drawing of the sewing machine of the plaintiff in error, showing the identity of such machine with the old art, and not with Brill.

THIRD REASON AND ARGUMENT FOR THE PETITION: THERE IS NO LEGAL EVIDENCE IN THIS RECORD UPON WHICH THE JUDGMENT OR ANY JUDGMENT FOR DAMAGES CAN BE FOUND OR SUSTAINED AGAINST PLAINTIFF IN ERROR.

Primarily, we understand that it is a well settled principle of law repeated and reiterated time and again in this court, that damages in patent causes must not be speculated and cannot be assessed upon guess work, and we invoke the law as to this question in the case at bar.

Seymour v. *McCormick*, 16 How., 490.
Mowry v. *Whitney*, 14 Wall., 621.
Blake v. *Robertson*, 94 U. S., 728.
Dobson v. *Carpet Co.*, 114, U. S., 445.

The two claims of the patent are as follows:

" 1. The combination of the wheel C, arm E, bracket " B, standard H, and screws F, G, substantially as and " for the purpose shown and specified."

" 2. The combination with a driving or fly wheel of " adjustable bearings, substantially as and for the purpose " shown and described."

The only testimony in this case upon which any judgment for damages could be founded as follows, leaving out the verbiage from essential parts:

Upon page 31 of the record, Brill swears that the difference in the cost of manufacture of his wheel and the old Singer wheel " is from ten to eighteen cents on each " machine."

Upon page 32 Brill testifies that it cost fifty cents to make his patented wheel on point centers with adjustable bearings; that he sold them for $3 apiece, *putting them on the Singer machines*, and his wheel, in his

opinion, added $5 in value to the Singer machine, without giving reasons therefor.

There is absolutely no other testimony in this reaord upon which the jury could find any verdict for damages and such fact is clearly recognized in the opinion of the Court of Appeals. (Rec., 272.) What is there in such loose statements, upon which any judgment for damages can be founded, and especially the judgment rendered sustained? The statement of Brill that he could make his "wheel" from ten to eighteen cents cheaper than the old Singer wheel, furnishes no such rule, as he has no patent on his wheel, and even if it were true, and so established, it is perfectly evident that the judgment rendered was not founded upon any such testimony. If it had been, it would have been some $3,000 instead of $10,000.

The other statement, namely, that Brill's wheel cost fifty cents, and he sold it for $3, is no ground for an assessment of damages, because it appears from the record that where he sold his wheel, as he calls it, he made the changes of altering the construction of the old machine, and applying his own wheel, a change which might easily amount in value of time, work and construction, to the sum of $3, or more, per machine, the amount received for the change made. It is equally apparent that no such rule of damages could have been considered by the jury, because if it had been, the judgment would have been more than $30,000 instead of $10,000.

There are, it is true, certain bare loose statements in the record of two or three witnesses to the effect that the "Brill wheel" added $5 to the value of a sewing machine, but no foundation or explanation given for such statements, and in each instance an accompanying admis-

sion that the witnesses never knew of a sewing machine to sell for a higher price on account of its having a Brill wheel.

It is perfectly evident that the judgment of this jury represents nothing other than the vicious and too common practice in this country of juries mulching responsible corporations and individuals in large sums of money simply because their sympathies were with the individual plaintiff, where there is no testimony except mere guesswork and speculation, upon which such judgment can be founded. The act and the fact of so doing in this case is more inexcusable and reprehensible, because the testimony of Mr. Brill himself shows that he had, in his own possession, under his own control, and created by his own acts, facts which, if put by him in the record and proven, would have furnished unerringly a recognized true measure of damages for the taking of his alleged invention, if such fact existed, and the jury would not have been left to guess at, and speculate and "toss up" when deliberating as to the amount of money of plaintiff in error they should give Mr. Brill.

Upon page 23 Mr. Brill swears that "*nearly all the sewing machine companies have bought shop-rights from me, at one time or another, for the use of this wheel. There is from twenty to twenty-three companies. The leading manufacturers of this country and two manufacturing companies of foreign countries bought shop-rights of this wheel.*"

No principle of law is better established than that where shop-rights of this character have been universally sold and accepted by the trade, such shop-rights are the best evidence of the true measure of damages to be assessed upon any valid patent, and as fixing the value thereof,

and the proposition needs no citation of authority for its establishment.

Instructions were asked and refused, and exceptions taken to the effect that the evidence submitted by the defendant in error, Brill, in this case, on the question of damages, was without character or force to establish any measure thereof. Such instructions, asked and refused, taking the form of instructions requested by the plaintiff in error, as to what was the true measure of damages and evidence to sustain the same necessary in this case. (Rec., 258. Refused instructions Nos, 46, 47, 48, 49, 50.)

FOURTH REASON AND ARGUMENT FOR THE PETITION: ALL ALLEGED EVIDENCE IN THIS RECORD AS TO DAMAGES OR PROFITS SUFFERED BY THE DEFENDANT IN ERROR, OR ACCRUING TO THE PLAINTIFF IN ERROR, RELATES SOLELY TO BRILL'S SECOND CLAIM, AND SUCH CLAIM BEING CLEARLY INVALID, AND SO FOUND BY THE COURT OF APPEALS, THIS WRIT SHOULD BE GRANTED AND THE JUDGMENT REVERSED.

Preliminary to the discussion of this ground of urgence for the granting of this petition, we again quote and call the attention of the court specially to the two claims of the Brill patent:

"1. *The combination of the wheel C, arm E, bracket* "*B, standard H, and screws F, G, substantially as and* "*for the purpose shown and specified.*"

"2. *The combination with a driving or fly wheel of* "*adjustible bearings, substantially as and for the purpose* "*shown and described.*"

It will at once be seen that the first of these claims is

a meager, narrow, specific and detailed claim for an exact and precise organization and alliance of the most common form of old devices. It will be seen also that the second claim is broad, sweeping and generic, and represents only all the invention that Brill describes or shows in his patent.

The court, in its charge to the jury, instructed the jury in substance that such second claim was the broad claim of the patent, and that "to infringe this claim there must "be a driving or fly wheel, and that driving or fly wheel "must swing or operate in adjustable bearings, substan- "tially as described." (Rec., 238.)

Brill says in his patent that the object of his invention "*is to increase the ease of operating the machine, diminish "the noise and provide a means of readily adjusting the "bearings of the driving or fly wheel, so that it may always "run true without shaking. * * * The bearings of "the wheel being merely points, the friction is much les- "sened, and consequently the labor of running is dimin- "ished. Should the wheel become loose, it can readily be "brought to its bearings by tightening the screw-pins "F. G.*"

It is perfectly evident that this statement of invention applies, and applies only, to the invention of the second claim. Brilll himself never thought or supposed that he had invented anything other or different than an adjustable fly-wheel upon point centers with its resulting advantages as described in the specification and identified by the second claim. Evidently, from the face of the patent itself, he supposed he was first to ever employ an adjustable fly-wheel upon point centers to diminish the noise and friction, and take up the lost motion. Curiously enough, Mr. Brill labored under this hallucination up to the date

of the trial of this case and the close of his direct examination.

In his testimony in this case, page 27, Mr. Brill by questions and answers, testified as follows:

"Q. Look at your second claim there, Mr. Brill, "which is for the combination with a driving or fly-wheel "of adjustable bearings, substantially as and for the pur- "poses described?

"A. Yes, sir.

"Q. You have stated you were familiar with sewing "machines prior to your invention, and, I want to get "you back to that point again, whether there was any "sewing machines in existence at that time which pos- "sessed adjustable bearings, and with the fly-wheel sub- "stantially as shown in your patent?

"A. There was not anything. I was the first man "that got out that wheel, and a wheel that was adjustable.

"Q. Up to that time, there was no combination of "adjustable fly wheel or crank fly wheel as shown in "your patent?

"A. None whatever."

Upon page 23 of the record, Mr. Brill again states the object of his invention as follows:

"The object of my invention is to make a sewing "machine run very much easier than it has run; and in "the second place, make this wheel adjustable when it gets "loose, so that there was a ready means for its adjust- "ment, so that anybody, a lady or anybody, could screw "up one of those screws and take up the lost motion, and "so that it would not make any noise, and be perfectly "satisfactory to everybody."

Every line of testimony given by Mr. Brill shows that he considered that he had made no other *invention* than

the doing away of the great friction in the old wheels and mounting his wheel upon centre points with an adjustable element to compensate for the wear. Brill swears in detail, in speaking of the old style of wheels and describing his *invention*, page 21, as follows: "Well, "the difficulty with this wheel was, that it ran very heavy, "because it had from two a and half to three inches "solid friction. * * * It made sewing machines "run too heavy; too heavy for women to use; and there "were very many complaints about sewing machines "running heavy; and then the wheel after it ran six or "eight months, why, it became loose, and shakes and "wabbles from one side to the other. * * * "And that led me to think that this might be improved "some way, and I found that I could improve that by "making the hub solid, and then I could bring those "screws on point centres to go into the solid part with "little cavities in there for the point centres, and I found "that the thing worked satisfactorily and it made sewing "machines *run very light, because I cut away about two "and a half or three inches solid friction*, and that wheel "then did not run on more than an inch, or less than an "inch friction; and it made sewing machines run so "light and easy, and at the same time when the wheel "would get loose there was not any difficulty at all in "adjusting it, *and I found that it was a good invention "and superior to this, and I got a patent on it.*"

Brill again, page 23, swears, in speaking of his invention, that prior to that time there was no sewing machine with a crank-wheel whereby lost motion could be taken up at will.

Again, upon page 29, Brill, speaking of his invention, says: "It ran half as light again, because it does away

" with all that friction. There is not half an inch friction " on this wheel. * * * It keeps it tight without making " any noise, and makes it run light and easy; and these " are point centers and it makes it run very light."

Again, Mr. Arthur C. Brown, a witness called in behalf of defendant in error, Brill, and qualified as being entirely familiar with the Brill invention, says, in speaking of the first time he saw the machine: " I could see at once that " there was a chance to take up lost motion and stop " that rattling, besides making the machine run very light " and quiet." (Rec., 81.) And this principal witness of the defendant in error, Brill, nowhere testifies that the *invention* of Brill was anything other or different.

The deposition of Mr. Brown also, upon cross-examation, pages 98, 99 and 100, shows that Mr. Brown admits that every element of invention identified and disclosed by Brill's second claim is found in the Dewey patent of August 7, 1866, No. 56,909, as to purpose, object, invention and result.

G. M. Glover was called as a witness in behalf of defendant in error, Brill, as to the Brill invention and damages for taking the same. The testimony of Mr. Glover shows that he considered the Brill invention to be simply the adjustible element upon point centers of the Brill wheel with its resulting advantages, and so states as follows: " It runs easier, it runs lighter, and another rea- " son, the machine is noiseless and always can be kept " that way."

All of this testimony shows conclusively beyond any cavil, criticism or doubt that whatever of *invention* there is in the Brill patent is embodied in and represented by the second claim of that patent, and all of the testimony

shows beyond cavil, criticism or doubt that every idea, thought, suggestion of invention of such second claim is contained in these old Presbrey, Dewey, Dayton & Mallory and Reese patents.

This fact is perfectly clear from the testimony and from the admissions of Brill himself from a comparison of this Brill patent with these old patents, and such fact was found unhesitatingly to exist as a fact, by the Circuit court of appeals, for the ninth circuit, where the court so found and held as follows:

"Owing to the existence of these prior patents and the "state of the art, as evidenced by the plaintiff's second "claim, for a combination with 'a driving or fly wheel of "adjustable bearings' under his own admissions, is clear-"ly without merit." (Rec., 270.)

There can be no possible doubt then, that the second claim of the Brill patent is invalid and so found and decreed to be by the Circuit court of appeals, and there is no doubt, also that this second claim was treated and admitted by both litigants all through the record as being the basic or broad claim of the Brill patent. There can be no contention that there is anywhere in this record any testimony that shows or intimates that any damages were assessed or could be assessed against the plaintiff in error for any infringement of Brill's first claim. All the alleged testimony, guess work and speculation as to this matter, applying by every reason of translation, intent and construction to the second claim, and the most that can possibly be contended for such testimony, is, that it may possibly refer to both claims, but the second claim having been declared invalid, and being clearly invalid in view of the old art even to a wayfaring man, what ground was there then for the finding of this verdict and judgment or

the sustainment of the same byt he Circuit Court of Appeals?

The authorities are uniform, and none can be found otherwise, to our knowledge, to the effect, that where the damages or profits are assessed upon two or more claims of a patent, and one of such claims is found invalid, such judgment or verdict is invalid and must fail.

Proctor v. *Brill*, 4 Fed. Rep., 415.
Wooster v. *Simonson*, 16 Fed. Rep., 680.
Moffitt v. *Cavanaugh*, 27 Fed. Rep., 511.

Both at the close of Defendant in Error's *prima facie* testimony and at the close of the putting in of the whole testimony, the Court was asked to instruct both as to the first and second claims separately, that such claims were void for want of patentable novelty and refused such request. (Rec., 264, Exceptions, 68, 69.)

We most earnestly and confidently urge upon this court the taking of jurisdiction of this case for the above reasons, and in the interests of uniformity of lines of decision in this country, which were uniform and unbroken, until the judgment appealed from in this case, was rendered.

FIFTH REASON AND ARGUMENT FOR THE PETITION: THAT THERE IS NO EVIDENCE ESTABLISHING OR FINDING INFRINGEMENT OF THE BRILL PATENT BY THE PLAINTIFF IN ERROR OF THE FIRST CLAIM.

Of course, if Brill's second broad claim means any kind of a driving or fly-wheel with adjustable bearings upon point centers, to diminish friction and noise, and take up the lost motion, the devices of the plaintiff in error infringes

that claim, and we shall assume that we have shown above that such broad claim is invalid.

As to the infringement of the first claim of Brill, namely, the combination of the wheel C, arm E, bracket B, standard H, and screws F, G', we most earnestly contend that there can be no contention of infringement of this claim, and that such fact is clearly apparent upon a mere comparison of the devices of the plaintiff in error with the devices of this first claim. This first claim of Brill's is purely a combination claim. Brill does not pretend to be the inventor of any of the six separate elements going to make up the combination. The patents of Dewey, Presbrey, Reese, and Dayton & Mallory, show that Brill appeared in the art long after all of the inventions and problems represented by his combination had been solved.

If there are any three propositions of patent law better settled than another in this country by the uniform decisions of this court, they are:

First. Where the old art is represented and the field occupied by former patentees, the later patentee is confined to the specific devices exhibited by his combination claim.

Sargent v. *Lock Co.*, 114 U. S., 663.
Snow v. *Railroad Co.*, 121 U. S., 617.

Second. That when so limited and confined, he cannot invoke the doctrine of mechanical equivalents to support a claim of infringement.

Zane v. *Soffe*, 110 U. S., 200.
Railroad Co. v. *Sayles*, 97 U. S., 554.

Third. That to infringe a combination claim, every

element of such combination, or a mechanical equivalent therefor, must be taken.

Prouty v. *Ruggles*, 16 Peters, 336.
Dunbar v. *Myers*, 94 U. S., 187.

A comparison of the sewing machine structure of the Plaintiff in Error with the first detailed combination claim of this Brill patent, shows at once that there is absolutely lacking one or more of the identified elements going to make up such first claim. The first claim of Brill identifies two sets of screws, F and G, each separately, as elements of his combination claim. The device of the Plaintiff in error has no set screws whatever.

One end of the crank-shaft is conical, and is fitted and journaled in a fixed recess in, and supported by, the side of the machine without any adjustable quality or characteristic whatever. The other end of the crank-shaft is also conical and journaled in a lug forming an adjustable bearing. Even if this lug can be considered as a mechanical equivalent for the adjustable set screw G of the Brill patent, there is absolutely absent from Plaintiff in Error's combination the set screw F or any mechanical equivalent therefor.

The two set screws of the Brill patent are absolutely necessary for the adjustability and centering of the wheel of the machine, because, by reason of its construction, there was an excessive lateral jamming or side movement with excessive wear and lost motion, necessitating two separate set screws at the respective ends of the journal shaft, so as to always keep the wheel in exact alignment and in the same place. In the machine of the Plaintiff in Error, no such conditions exist, and, therefore, permits the elimination of the two set screws of Brill and the use of

the adjustable lug at one end of the journal shaft for purposes desired.

Again, an inspection of the Brill patent shows that he put a down-hanging bracket upon the under side of his sewing-machine to support the inner end of his crank-arm by his adjusting set-screw, such bracket being marked B in the patent, and made one of the principal elements of Brill's first claim. The device of the plaintiff in error has no bracket B or bracket of any description. It has a common brace extending from side to side of the machine from top to bottom, and such brace is utilized to support one end of the journal carrying the wheel and riding upon the adjustable lug. This brace has nothing more or less than the intermediate support and standard extending from the top to the bottom of the old machines. The particular down-hanging bracket B of the Brill patent is not present at all in the machines of the plaintiff in error, nor any mechanical equivalent therefor, as there was nothing new in Brill's bracket except the fact of its shortness and suspension from the top of the machine for the sole purpose of carrying the wheel journal.

Again, the arm E of the Brill patent is a particular and peculiar shaped arm and supplemented with the projection D on the opposite side and off center of his fly-wheel, made a particular and peculiar arrangement not present at all in plaintiff in error's devices, nor any mechanical equivalent therefor. The device of the plaintiff in error being simply the old crank-journal present in several of the above patents.

Again the machine of the Plaintiff in Error has not the fly-wheel C of this Brill patent combined with the arm E as described, for the reason that said Brill patent

provides that such arm E is to be attached to the wheel below its center, and is so shown in both figures of the drawings.

It is a very significant fact in this connection that Brill himself testified that the *only* difference between the device of his patent and the devices of these old patents "was a difference of construction alone." (Rec., 50.)

We most earnestly urge that this verdict and judgment, in view of the above facts based upon a found infringement is a violation of the established law fixed by this court determining questions of infringement and in the interests of uniformity in lines of decision this petition should be granted. It will be a calamity amounting in fact to an infamy in the judicial procedures of this country if juries are allowed to disregard and overrule the law as fixed by this court, relating to the infringement of combination claims, and find that infringement exists by the presence of one or more of the elements of the combination alone, and mulch defendant litigants in large damages thereby—exactly what has happened in this case. The refused instruction to the jury as to this matter is found upon page 264, Nos. 70, 71.

We do not know with what force it may strike this Court, but it appears to us that the peculiar questions of litigation in this country founded upon inventions and patent property rights, have a particular and unusual claim upon this Court for consideration and recognition in determining the question of the assumption of jurisdiction of causes by way of this writ of certiorari under the act here invoked.

Under the Constitution the determination of the validity and scope of letters patent has devolved solely upon

the federal courts and under the Congressional Acts upon the Circuit Court branch thereof. The questions involved, especially in the last decade and prospectively in the next decade, are and have been simply vast and inconceivable. The great inventions or discoveries of this country in this age are, as a matter of course, protected by letters patent and equally, as a matter of course, alleged to be pirated and infringed. It is a fact recognized and admitted by the Courts themselves, that many of the Judges are without skill or experience in mechanical questions, upon which all patents are founded, especially those Judges in Circuits that are barren of industries and where mechanical questions presented and opportunities for analysis and study thereof, are few.

Many of the federal judges of this country, frankly state, that they have neither the disposition nor the ability, to study, understand and analyze the construction and operation of mechanical devices, especially when such devices are represented by the plain line drawings of patents, and technical descriptions thereof, and of course, such drawings and descriptions in patent causes frequently constitute the principal, if not sole, defenses to asserted patents. The ordinary juries of the country, no matter how honest or intelligent, are equally without the special education or capacity to understand and pass rightly upon mechanical devices or questions. To such an extent has this latter fact been recognized, that the cases are few and in many circuits, without representation, where any suit has ever been brought upon Letters Patent except upon the equity side of the Court.

For these reasons principally, it does appear to us that particular favor should be extended by this Court to these questions of property and litigation, and that jurisdiction

should be taken by way of the writ of certiorari petitioned for, in those cases where it is clearly apparent upon the bare statement of facts, that the established rules of decision and the fixed law of this Court relating to the litigation of patents and inventions have been violated and the rights of litigants palpably and grossly ignored. We believe, further, and have so founded this petition, upon the firm conviction that our client in this case has been a victim and recipient of a great wrong by the finding and sustainment against it of a verdict in a sum of damages equal to a fortune in extent to the ordinary citizen, and that, too, upon a patent grant which, when understood and sifted, is without value or validity, and, if possibly, valid, worthless, as to any assertion of property against the mechanical devices manufactured by our client under its own patent.

Respectfully submitted.

C. K. Offield.
M. A. Wheaton.

[redacted]

IN THE

Supreme Court of the United States.

OCTOBER TERM, A. D. 1893.

Term No., 955.

THE SINGER MANUFACTURING COMPANY, PLAINTIFF IN ERROR,

vs.

A. BRILL, DEFENDANT IN ERROR.

Brief and Argument for Defendant in Error by J. J. Scrivner, Attorney and Counsel for Defendant in Error.

The jurisdiction of this honorable Court is invoked in this case upon the ground that the questions involved are of great gravity and importance, such as contemplated in the Lau Ow Bew case, 141 U. S., 583, and because an adjudication of the questions of law and fact involved in this case would be in the interest of jurisprudence and would "insure uniformity and straight lines of decisions and judgments" in cases involving weighty and serious matters such as contemplated in the case of *In re* Woods, 143 U. S., 145.

We respectfully maintain that this case does not come within the rules laid down in those or any cases so far de-

termined by this Court under the statute creating the United States circuit courts of appeals. The questions upon which it is sought to obtain an adjudication by this Court are stated on pages 6 and 7 of the brief for plaintiff in error. They simply involve the question of the validity of the Brill patent sued upon—the question of infringement and the question of damages.

Now, this case is nothing more nor less than an ordinary suit at law for infringement of a patent. There are no new questions involved in it. The question as to the validity of the patent was passed upon by the court. The question of infringement was submitted to the jury under the instructions of the court, as was the question of damages. If there are any errors in this record they are such errors as are liable to arise in every patent case that has been or is to be tried in the United States, and if this case is to be reviewed in this manner on account of such errors as are contended exist, then every patent case where the defeated party is able to bring his case into this Court by this writ will undoubtedly be here, because every defeated litigant is supposed to be earnest and honest, and, as a general rule, he feels that great injustice has been done him by an adverse decision.

Counsel for plaintiff in error insist also that momentous questions are involved, and that numerous suits have been threatened by the defendant in error if this judgment stands. We are surprised that learned counsel should endeavor to make the point that suits can or will be brought in the various districts of the United States, because they must know that since the amendment of 1888 a foreign corporation cannot be sued in this class of cases outside of the State in which the corporation was organized.

See Shaw *vs.* Quincy Mining Co., 145 U. S., 444.

This rule has been adopted in several of the circuit courts, and, we apprehend, is now the established law; consequently, but one other suit could be brought, to wit, in the

United States circuit court for the district of New Jersey. The record shows that the plaintiff in error is a corporation organized under the laws of the State of New Jersey. If such a suit should ever be brought, it will be time enough then to raise the question of uniformity of decision, because the fact that the court of appeals for one circuit has rendered a different judgment from that of the circuit court of appeals for another under the same conditions might furnish grounds for a certiorari on a proper application.

Columbus Watch Co. *vs.* Robbins, 148 U. S., 266.

Again, it is evident that an ordinary patent case like the one now before the Court cannot be considered one involving solely questions of gravity and importance, such as contemplated by this Court in its opinion in the Lau Ow Bew case cited by counsel for plaintiff in error.

The case of *In re* Woods, 143 U. S. page 202 (incorrectly cited in the brief of plaintiff in error as being page 145), would seem to be an authoritative declaration by this Court that such a case as this would not be heard in this Court under a writ of this kind. The Court there said that it did not regard the inquiry as to whether it was settled law in the State of Minnesota that a judgment of dismissal in a former suit such as pleaded here was not a bar to a second suit upon the same cause of action; or whether the law in respect to recovery by a servant against his master for injuries received in the course of his employment was properly applied on the trial of this case as falling within the category of questions of such gravity and general importance as to require the review of the conclusions of the circuit court of appeals in reference to them.

It is true that in that case the verdict was for only $3,800 and costs, while in this case it was for the sum of $10,000; but we apprehend that this Court will not take notice of a case simply because the verdict happens to be of a greater or less sum.

The case of The American Construction Co. *vs.* Jacksonville, Tampa & Key West R. R. Co., 148 U. S., 372, presents the most elaborate discussion and statement of the character of cases and questions which will be certified to this Court that has yet appeared, so far as we know.

On page 383 the Court said that the jurisdiction here invoked had been held to be a branch of the jurisdiction of this Court which should be exercised sparingly and with great caution and only in cases of peculiar gravity and general importance or in order to secure uniformity of decision.

The uniformity of decision referred to, it may be assumed, has reference to securing a uniformity of decision amongst various circuit courts of appeal, and that it was not intended to mean that this Court would look into every case that might arise to see whether the decision of any circuit court of appeals was in conformity with prior decisions of this Court. If so, then every case decided by the court of appeals will have to be certified up in order to determine that very question, and the very object of the act, as stated by this Court on page 382, *id.*, would fail, and the circuit court of appeals at once cease to be of any value to the public and actually become a clog to litigation, and render it more expensive and tedious than it was prior to the passage of the act organizing it.

The merest glance at the brief filed by plaintiff in error in this case shows that there are no questions involved of any distinctive general importance. In a general sense it may be said that it is important to have every case decided right and according to the law, and if this is to be the ground of the exercise of this jurisdiction of this Court, then every case will have to be investigated and decided by it. No reason is shown here why the validity or invalidity of the Brill patent should be passed upon any more than the validity or invalidity of any other patent.

Again, no reason is shown why this Court should examine

the question as to whether the Brill invention was anticipated by the patents introduced for that purpose. Very few patent cases are tried at this time in which the question of anticipation does not arise, and why should the Court look into that question on certiorari in this case any more than in every other case?

It is also urged that there is no legal evidence in the record upon which a judgment for damages could be found or sustained. Certainly this is not a question of such grave importance as to require the exercise by this Court of its extraordinary power of reviewing this case under certiorari proceedings. The same may be said of the other two points made by counsel for plaintiff in error.

As the only question now before the Court is as to whether the discretion of the Court shall be exercised in granting the writ, we do not understand that a discussion of the merits of the case is proper. When the writ has been granted and the record certified in obedience to it, if such order should be made, we suppose we will then have an opportunity to discuss those questions.

Before closing this brief, however, we desire to submit to the Court the question of the constitutionality of that part of section 6 of the act of March 3, 1891, under which it is sought to have these proceedings reviewed in this manner. We cannot find that the suggestion has ever been made before. In section 2 of article 3, Constitution of the United States, it is provided that the Supreme Court shall have appellate jurisdiction, both as to law and fact, with such exceptions and under such regulations as Congress shall make, and the question arises whether Congress has the power to determine that the Supreme Court shall or may exercise this appellate jurisdiction by means of a writ of certiorari, to be issued at its discretion. It will be observed that the granting of this writ under the act is entirely discretionary with the Supreme Court, and it does not seem to be in accordance with the constitutional plan that the Court should exercise

its appellate jurisdiction at its pleasure and in such cases only as it saw proper to exercise it in. If the granting of this writ is the exercise of an appellate jurisdiction, it would seem that it ought to be a matter of absolute right and absolute certainty, and that it should apply to every case determined by the lower Federal courts.

The statute does not attempt to make it obligatory upon the Court to grant the writ; hence it would seem that the action of the Court in such matters was not contemplated to be the exercise of that appellate jurisdiction which the Constitution provides that this Court *shall have*. Of course, it is understood that the whole judicial power of the United States is vested in some court either in an original or appellate form. The same section of the Constitution also provides for the class of cases wherein this Court has original jurisdiction, and clearly a patent case is not one of them. It is equally clear that whatever jurisdiction this Court can exercise in this case is appellate and not original. Story says that this language of the Constitution is imperative. Of course, such jurisdiction would lie dormant until Congress provided the method or means of its exercise, and that is the condition that we contend this matter is in at this time. The various congressional provisions providing for writs of error and appeals from the circuit courts to this Court having been repealed by the act of March 3, 1891, and said act conferring, as it does, upon the United States court of appeals appellate jurisdiction and providing a method by which such cases could be carried into said court of appeals by writs of error or appeal, there is at this time no method by which the appellate jurisdiction of this Court can be invoked in cases where the action of the court of appeals is made final by the act. A writ of certiorari is an original process sued out of this Court, and, so far as this act is concerned, it may be granted *ex parte* and simply upon a motion made in open Court without any record whatever. The writ itself must run to the lower court directing it to

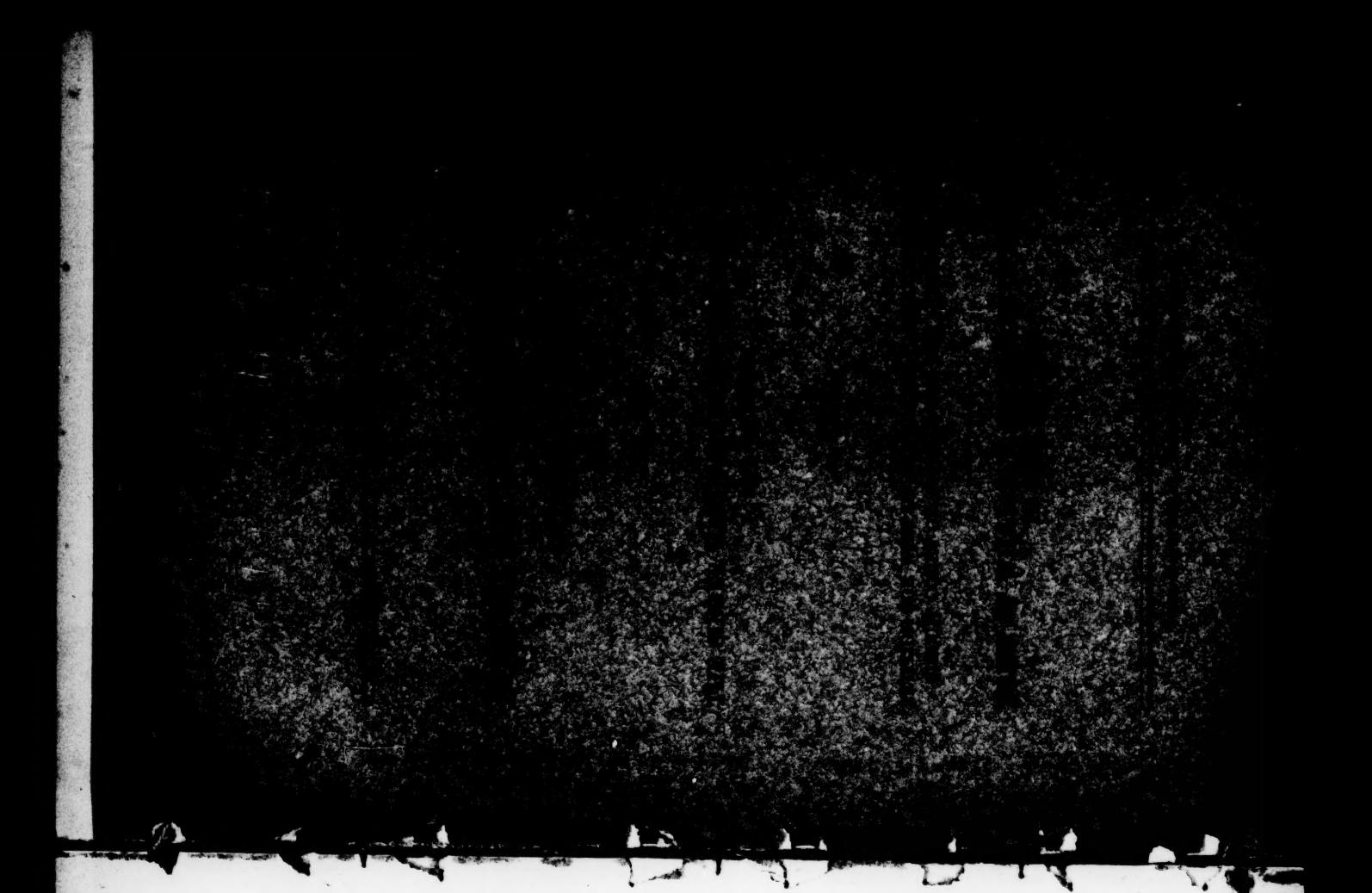
send its record for review, and is always and especially under this act to be granted at the discretion of the Court.

Now, we contend that Congress has no power to confer upon this Court the power to exercise its appellate jurisdiction through the means of an original process sued out of this Court.

To state the question in another form, it is clear that all appellate jurisdiction which is vested in this Court by the Constitution is imperative and mandatory. These various writs, which are issued at the discretion of the Court, of course are not imperative nor mandatory, and cannot, therefore, be the exercise of an appellate jurisdiction.

We contend that there is a fundamental distinction between a writ of error and a writ of certiorari that runs through our entire system of jurisprudence and which cannot be ignored by the legislative department of the Government.

J. J. SCRIVNER,
For Defendant in Error.



Supreme Court of the United States.

OCTOBER TERM, 1893.

No. 955.

THE SINGER MANUFACTURING COMPANY, PLAINTIFF IN ERROR,

vs.

A. BRILL.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE NINTH CIRCUIT.

BRIEF OF WILLIAM A. MAURY IN OPPOSITION TO THE MOTION.

The judgment in this case having been affirmed by the circuit court of appeals for the ninth circuit, the plaintiff in error, the original defendant to the action, now attempts to obtain the benefit of the reviewing power of this Court by means of the extraordinary proceeding of the writ of *certiorari*, under section 6 of the act of March 3, 1891, entitled "An act to establish circuit courts of appeals and to define and regulate in certain cases the jurisdiction of the courts of the United States and for other purposes."

This is an action at law brought by the defendant in error, A. Brill, against The Singer Manufacturing Company, plaintiff in error, to recover damages for the infringement of the plaintiff's patent for "a new and useful improvement in sewing-machine treadles," by unlawfully attaching the said device and improvement to the sewing machines manufactured and sold by the company.

After an obstinate and able defence, as is shown by the 67 exceptions to rulings of the trial court, contained in the record, a verdict was rendered for the plaintiff, assessing his damages at $10,008.30 (Rec., p. 15), and judgment went accordingly.

This Court is now asked to assume appellate jurisdiction in the case and make it an exception to the general rule declared by section 6 of the act of March 3, 1891, that the judgments of the circuit courts of appeals shall be final in all cases where jurisdiction depends on diverse citizenship, on the ground that the judgment is erroneous in the following particulars:

1. That there is nothing in the record on which the verdict and judgment can be sustained.

2 and 3. That there is no evidence in the record to show what damage plaintiff sustained for the use of his improvement considered apart from the mechanism to which it is attached and which is not covered by the patent, but that the evidence as to damages relates to the whole machine.

4. That it is "apparent from the record" that the defendant has not been guilty of any infringement.

5. That the patent is clearly void as to both of its claims.

These 5 specifications of error have been selected from the 71 assigned in the record (pp. 247–264) to support this application for the writ of *certiorari*.

Apparently to make up for the weakness of these specifications of error, the plaintiff in error travels beyond the record for the materials for a purely gratuitous imputation which, it was no doubt thought, would tend to inflame this Court against the defendant in error.

The charge is made that the defendant in error has threatened to sue the Singer Manufacturing Company in every Federal judicial district in the country for infringing his patent, and, it is alleged, that, if this judgment is suffered to stand, a judgment for $10,000 may be recovered against the company in every such district, and that the aggregate of all such recoveries would be $560,000.

The plaintiff in error, furthermore, seeks to alarm this Court and disturb its equilibrium by an exaggerated and intemperate forecast of a revolutionary effect on jurisprudence which, it is stated, must be expected if this judgment is allowed to stand unreversed.

It is true this Court has a discretion as to issuing the *certiorari* in like manner as the circuit courts of appeals have a discretion as to certifying a matter of law to this Court; but the discretion, in both cases, is not arbitrary, but of a very particular character and to be exercised in subordination to the great intent of the act of March 3, 1891, namely, to remove the reproach of the delay of justice and, therefore, the *denial* of it, by taking from this Court a large proportion of its appellate jurisdiction. Unless, therefore, the discretion as to granting the *certiorari* and certifying matters of law is rigorously subjected to this dominating intent of the act of March 3, 1891, the evils of the old law consequent upon unrestricted writs of error and appeals will return by the abuse of the *certiorari* and the power to certify matters of law.

It is of great public concern, therefore, that this Court should not open the door wide to the *certiorari*, for, if it does, the circuit courts of appeals will assuredly open another door, equally wide, to certifying questions of law.

The discretion, then, lodged in the Federal appellate courts in these respects is, as we have said, of a very particular character, and upon the wisdom of its exercise depends the fate of the act of March 3, 1893, as a measure of law reform. The fact that Congress has thus put it in the power of the courts vested with the Federal appellate jurisdiction to give success or failure to this legislation devolves on those courts a grave and, I was about to say, a fearful responsibility.

It is evident that this Court profoundly appreciates the delicacy and gravity of its function as to the *certiorari*, for it has said that this function is to be used "*sparingly and with great caution*" and "*solely*" as to "*questions of gravity and importance*" (Lau Ow Bew, 141 U. S., pp. 587, 589) or "*in the interest of uniformity of decision*" (S. C., *nomine* Lau Ow Bew *vs.* U. S., 144 U. S., 47, 58; *In re* Woods, 143 U. S., 202, 206; Amer. Const. Co. *vs.* Jacksonville Railway, 148 U. S., 372, 382, 383, 384, 385, 386).

Let us now consider the grounds on which this application is made in connection with these decisions.

It is really only necessary to say, in order to dispose of this application, that the petition for the *certiorari* (pp. 3–7) does not show that the circuit court of appeals has laid down a single erroneous principle, the most that is contended for being that certain established principles have been *misapplied or disregarded*, as *In re* Woods, *supra*, so that the supposed mischief of the rulings complained of must end with this case, no two cases being precisely alike.

Admitting, for the sake of argument, that the Singer Company had the right to insist on nominal damages only, because, as alleged, it had so confused and combined Brill's invention with the mechanism of its sewing machines that Brill could not clearly prove the exact damage he had sustained, will this Court grant a *certiorari* to enable it to determine whether the circuit court of appeals used golden scales or not in weighing the inventor's damage from the

unlawful act? Is this a matter of *extraordinary public interest* justifying the removal of the case to this Court?

Again, supposing that Brill's patent was invalid for want of novelty, as is contended, why should the case be brought here for error any more than other patent cases? The statute says that the judgments and decrees of the circuit courts of appeals in such cases shall be final, but if a *certiorari* is allowed on this application how can it be denied in any other patent case, we respectfully ask?

Appreciating the weakness of this application, the plaintiff in error endeavors to show that it should be granted in the interest of uniformity of decision, because, it is said, outside the record, that the inventor, Brill, has threatened to bring a suit, similar to this one, against the plaintiff in error in every Federal judicial district in the country, and that a recovery of $10,000 *in every such suit is to be apprehended*, and that the only protection against this threat is the *certiorari!*

The answer to all this, if it calls for an answer, is, that the Singer Company, being a corporation created by the law of New Jersey, cannot be sued in a United States court outside of that State, unless the company waives the right to plead its privilege in abatement by pleading issuably and voluntarily submitting to the jurisdiction of the court (Shaw *vs.* Quincy Mining Co., 145 U. S., 444; So. Pacific Co. *vs.* Denton, 146 U. S., 202).

But, if this were not so, it is manifest that the judgment in this suit would be an *absolute bar* to any other suit against the plaintiff in error, anywhere in the country, for damages caused by infringements of the Brill patent for the period anterior to this suit. The present action is *transitory* and in nowise local, and the judgment cannot be confined in its effect to the limits of the State of California, even if the scope of the complaint were thus confined, instead of covering, as it does, the whole field of infringement (Rec., p. 11, par. 11, 12, 13 of the complaint), the policy of the law being against the splitting up of one entire demand into several.